



PPT 8800 Series



Product Reference Guide for Embedded Windows[®] CE .NET

***PPT 8800 Series
Product Reference Guide
for Embedded Windows[®] CE .NET***

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Revision A

March 2005

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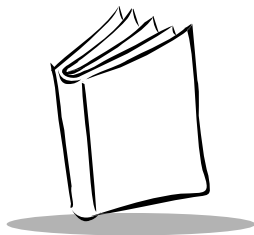
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Revision History

Changes to the original manual are listed below:

Change	Date	Description
-01 to -02	9/2003	Add Bluetooth functionality. Add CRD8800-4000E, CRD8800B-1000S, CRD8800-4000S operating procedures to Chapter 1 and Chapter 4. Add IPL mode key combination for 15-key keypad.
-02 to -03	3/2005	Update battery charging temperature; add mobile computer and cradle connection cleaning procedures.



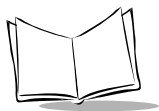
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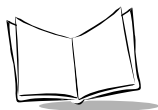
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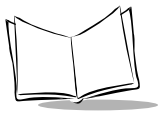
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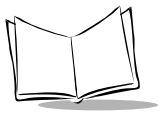
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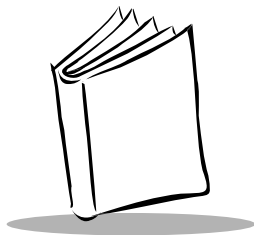
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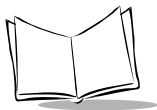
The *PPT 8800 Series Product Reference Guide for Embedded Windows® CE .NET* provides information about the PPT 8800 Series terminal using the Windows® CE .NET Operating System, and its accessories. The PPT 8800 Series includes the following variations of the terminal:

- PPT 8800 Performs 1-dimensional scanning and batch communication. Memory configuration: 32 MB ROM/32 MB RAM, optional 128 MB additional CF memory.
- PPT 8846 Performs 1-dimensional scanning and uses the Symbol Spectrum24® radio to perform 11 MB local area network (LAN) wireless communication. Memory configuration: 32 MB ROM/32 MB RAM.
- PPT 8860 Performs 1-dimensional scanning with Bluetooth® wireless technology to perform personal area network (PAN) communication. Memory configuration: 32 MB ROM/32 MB RAM.

Chapter Descriptions

Topics covered in this guide are as follows:

- [Chapter 1, Getting Started](#) explains the physical buttons and controls on your terminal, how to install and charge the batteries, insert and remove the compact flash card, replace the handstrap, and start your PPT 8800 terminal for the first time.
- [Chapter 2, Operating the PPT 8800](#) explains how to use your terminal, including instructions for powering on and resetting the terminal, using the stylus and a headset, entering information, and scanning.



- [Chapter 3, Settings](#) explains how to adjust settings on the terminal, and add and delete programs.
- [Chapter 4, Communications](#) explains how to use Microsoft® ActiveSync™ for communications between the terminal and host computer.
- [Chapter 5, Applications](#) describes how to use the applications installed on the terminal.
- [Chapter 6, Spectrum24 Network Configuration](#) describes how to configure the Spectrum24 wireless connection.
- [Chapter 7, Bluetooth](#) describes how to use and configure the Bluetooth wireless connection.
- [Chapter 8, Software Installation on Development PC](#) provides instructions for installing the Software Developer's Kit on your host computer.
- [Chapter 9, Configuring the Terminal](#) describes how to install and use the Terminal Configuration Manager (TCM) and Initial Program Loader (IPL).
- [Chapter 10, AirBEAM Smart](#) explains how to set up your terminal to synchronize with a server over using the AirBEAM Client and AirBEAM Staging applications.
- [Chapter 11, Maintenance and Troubleshooting](#) provides information to help you take proper care of your PPT 8800 terminal and solve problems that may come up.
- [Appendix A, Technical Specifications](#) includes a table listing the technical specifications for the terminal.
- [Appendix B, Keyboard Maps](#) includes tables listing key functionality for the keyboard.

Notational Conventions

This document uses these conventions:

- “terminal” or “PPT 8800” refers to any model of the terminal.
- “User” refers to anyone using an application on the terminal.
- “You” refers to the End User, System Administrator or Technical Support person using this manual as a reference to install, configure, operate, maintain and troubleshoot the terminal.
- *Italics* are used to highlight specific items in the general text, and to identify chapters and sections in this and related documents. It also identifies names of windows, menus, menu items, and fields within windows.
- **BOLD** identifies buttons to be tapped or clicked on windows.

- Bullets (•) indicate:
 - lists of alternatives or action items.
 - lists of required steps that are not necessarily sequential.
- Numbered lists indicate a set of sequential steps, i.e., those that describe step-by-step procedures.

Related Documents

The following documents provide more information about your terminal.

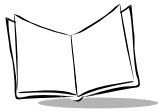
- *PPT 8800 Series Quick Reference Guide*, p/n 72-58093-xx
- *CRD8800-1000S Serial Cradle Quick Reference Guide*, p/n 72-58095-xx
- *CRD8800B-1000S Serial Cradle Quick Reference Guide*, p/n 72-64181-xx
- *CRD8800-4000S Serial Cradle Quick Reference Guide*, p/n 72-58096-xx
- *CRD8800-4000E Ethernet Cradle Quick Reference Guide*, p/n 72-59203-xx
- *MSR8800 Magnetic Stripe Reader Quick Reference Guide*, p/n 72-64824-xx
- *TRG8800 Trigger Handle Quick Reference Guide*, p/n 72-64623-xx
- *AirBEAM Package Builder Product Reference Guide*, p/n 72-55769-xx
- *AirBEAM Smart Windows® CE Client Product Reference Guide*, p/n 72-63060-xx
- *Windows CE Help File for Symbol Terminals*, p/n 72E-38880-xx
- *Symbol Windows CE Software Developer's Kit (SDK) for PPT 8800*, available at <http://software.symbol.com/devzone>
- ActiveSync software, available at <http://www.microsoft.com>.

Service Information

If you have a problem with your equipment, contact the [Symbol Support Center](#) for your region. See [page xviii](#) for contact information. Before calling, have the model number, serial number, and several of your bar code symbols at hand.

Call the Support Center from a phone near the scanning equipment so that the service person can try to talk you through your problem. If the equipment is found to be working properly and the problem is symbol readability, the Support Center will request samples of your bar codes for analysis at our plant.

If your problem cannot be solved over the phone, you may need to return your equipment for servicing. If that is necessary, you will be given specific directions.



Note: *Symbol Technologies is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty. If the original shipping container was not kept, contact Symbol to have another sent to you.*

Symbol Support Center

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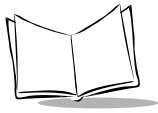
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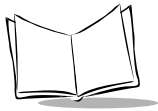


Chapter 1

Getting Started

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Introduction

This chapter explains the physical buttons and controls on your terminal, how install and charge the batteries, replace the handstrap, and start your terminal for the first time.

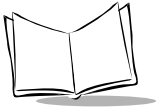
Unpacking the Terminal

Carefully remove all protective material from around the terminal and save the shipping container for later storage and shipping.

Verify that you received all equipment listed below:

- terminal
- lithium-ion battery
- handstrap, attached to the terminal
- case
- stylus, in the stylus silo
- *Quick Reference Guide*.

Inspect the equipment for damage. If you are missing any equipment or if you find any damaged equipment, contact the Symbol Technologies Support Center immediately. See [page xviii](#) for contact information.



Parts of the Terminal

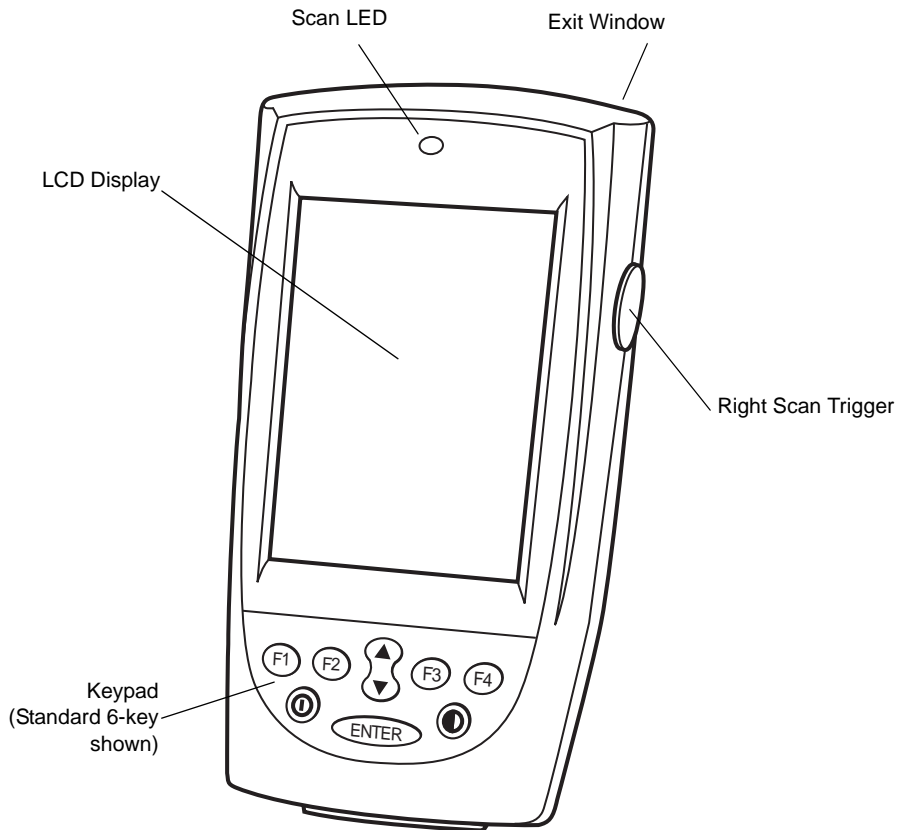


Figure 1-1. Front View

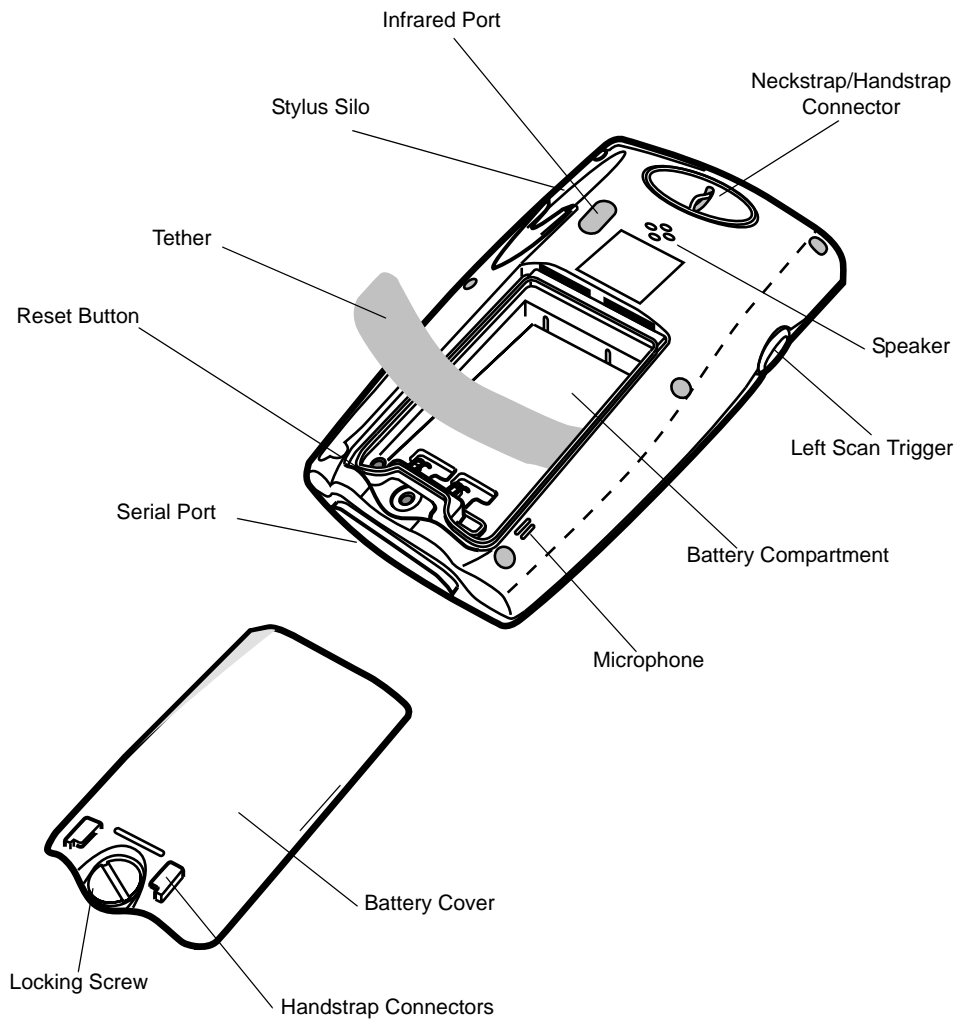
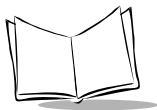


Figure 1-2. Back View



Accessories

Note: For specific part numbers for PPT 8800 Series accessories, visit the PPT 8800 with WInows Embedded CE .NET accessory web page: http://www.symbol.com/products/mobile_computers/ppt8800acc.html.

- Spare standard lithium-ion battery.
- Larger capacity lithium-ion battery kit.
- Stylus: for performing pen functions.
- Cable Cup: connects to the terminal to an autocharge adapter and various cables.
- Cables:
 - DEX Cable: connects the terminal to a vending machine.
 - Autocharger: connects to the cigarette lighter in a vehicle to charge the terminal.
 - Printer Cables: adds printing capabilities to the terminal.
 - USB Cable: allows USB connection from the Cable Cup to a host computer
 - Attachable power supply and line cord: allows charging of the terminal through the Universal Cable Cup.
- Serial Charging Cable: allows serial connection of the terminal to a host computer.
- Single-Slot Serial Cradle: charges the terminal and spare standard battery and synchronizes the terminal with a host computer through a serial connection.
- Single-Slot Serial Cradle with Larger Capacity Battery Support: charges the terminal with standard or larger capacity battery and spare standard battery and synchronizes the terminal with a host computer through a serial connection.
- Four-Slot Serial Cradle: charges up to four terminals with standard or larger capacity battery and synchronizes the terminals with a host computer through a serial connection.
- Four-Slot Ethernet Cradle: charges the terminals with standard or larger capacity battery and synchronizes the terminal with a host computer through an ethernet connection.
- Holster: stores the terminal when not in use.
- Pistol Grip Handle: provides gun form factor ergonomics for scan intensive applications.

- Magnetic Stripe Reader (MSR): snaps on to the terminal to add magstripe capabilities.
- Vehicle Cradle: powers the terminal and charges its battery, and can be used to communicate with other devices such as printers.
- Symbol PPT 8800 Software Developer's Kit (SDK) for Embedded Windows CE .NET.

Getting Started

In order to start using the terminal for the first time:

- install the main battery
- charge the main battery and backup battery
- start the terminal
- configure the terminal.

Installing the Main Battery

Before using your terminal, install a lithium-ion battery:

1. Turn the locking screw counterclockwise until the cover releases from the terminal.
2. Lift the battery door away from the terminal.

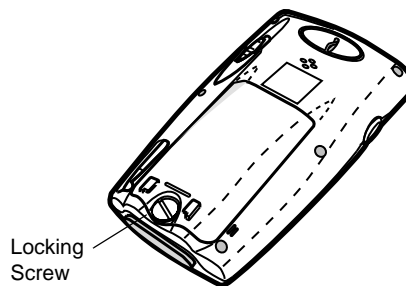
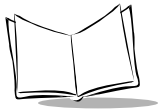


Figure 1-3. Locking Screw



3. Insert the lithium-ion battery in the battery compartment with the battery tether positioned as shown, ensuring the battery snaps into place.

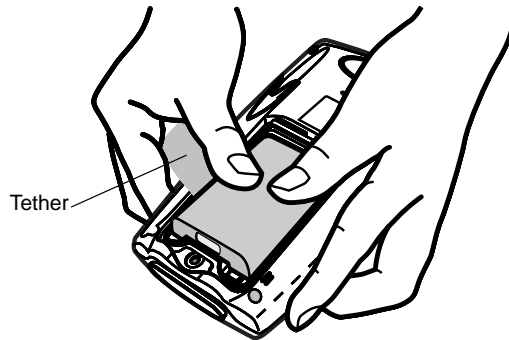


Figure 1-4. Inserting the Battery

Note: Ensure the battery is positioned correctly. The battery charging contacts should be placed on top of the charging contacts in the battery compartment.

4. Replace the battery cover by inserting the top first, then pressing the bottom in firmly.

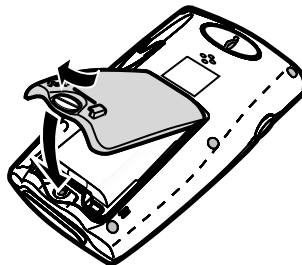


Figure 1-5. Closing the Back Cover

5. Turn the locking screw clockwise to secure the battery cover to the terminal.

Installing the Optional Larger Capacity Battery

To install the optional larger capacity battery:

1. Remove the bottom of the handstrap from the battery cover.
2. Unscrew the locking screw and remove the battery cover.

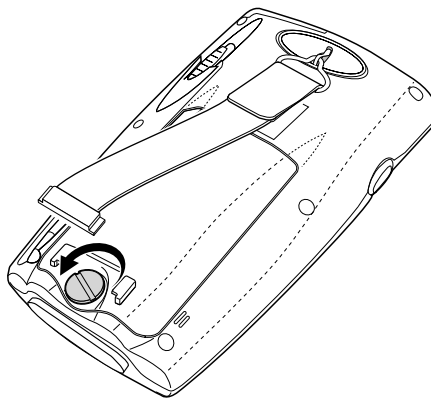


Figure 1-6. Unscrew Locking Screw

3. If a battery is installed, pull tether up to release battery.
4. Insert the larger capacity battery in the battery compartment with the battery tether positioned as shown, ensuring the battery snaps into place.

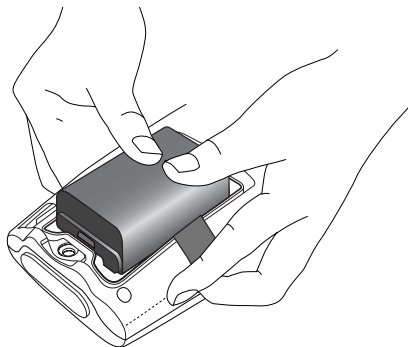


Figure 1-7. Installing the Larger Capacity Battery



5. Replace the new battery cover by inserting the top first, then pressing the bottom down firmly.

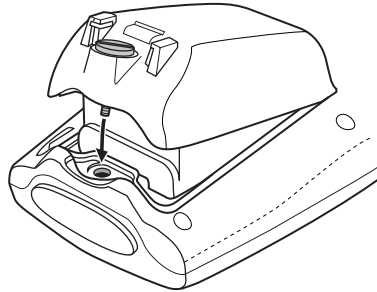


Figure 1-8. Secure New Battery Cover

6. Tighten the locking screw to secure the new battery cover to the terminal.
7. Re-attach the handstrap to the handstrap connector on the new battery cover.

Charging the Terminal Battery

Note: To charge the battery for your mobile device, battery and charger temperatures must be between +32° F and +104° F (0° C and +40° C).

Charging the Main Battery and Memory Backup Battery

Before using your terminal for the first time, charge the lithium-ion battery in the terminal for about 2 1/2 hours, using the cradle or the serial charging cable.

Note: To ensure the quickest charging time, turn the terminal off while charging.

Your terminal is equipped with a memory backup battery which automatically charges from the fully-charged lithium-ion battery. This backup battery retains data in memory when the terminal's battery is removed. When you first use your terminal, it takes about 24 hours to charge the backup battery from the main battery.

Note: If you remove your lithium-ion battery before the backup battery is fully charged, data may be lost. For this reason, **DO NOT** remove the battery within the first 24 hours of use.

Using the Serial Charging Cable

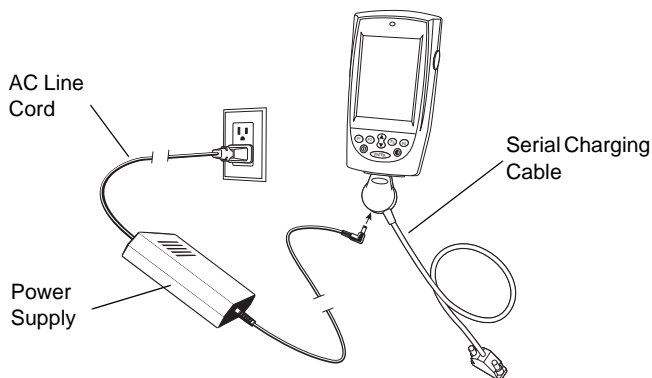


Figure 1-9. Power Set Up

The battery usually charges in 2 1/2 hours to fully charge.

Using the Single-Slot Serial Cradle

You can charge the battery in the terminal using either the CRD8800 or CRD8800B Single-Slot Serial Cradle. The CRD8800B cradle accepts a terminal with the larger capacity battery kit installed on the terminal. To charge the terminal's battery using the Single-Slot Serial cradle:

1. Connect the cradle to a power source.

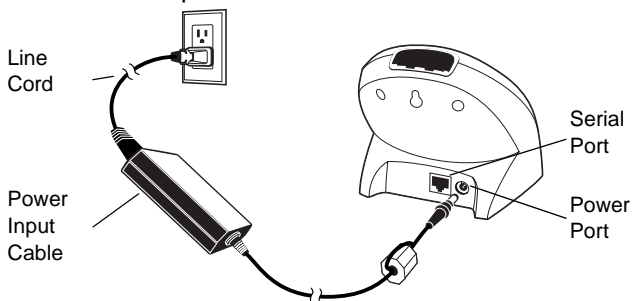


Figure 1-10. Connecting Power to the CRD8800 Cradle

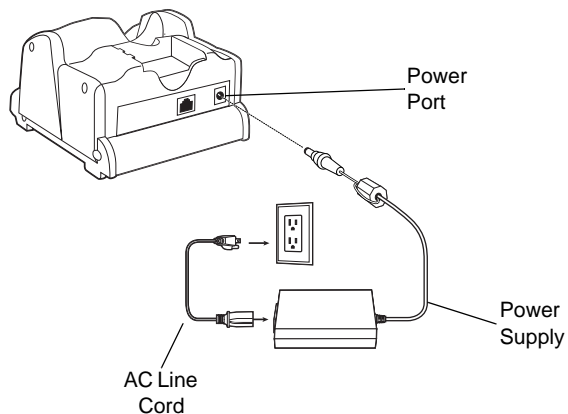
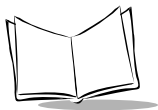


Figure 1-11. Connecting Power to the CRD8800B Cradle

2. Insert the terminal into the cradle. The terminal starts to charge automatically.

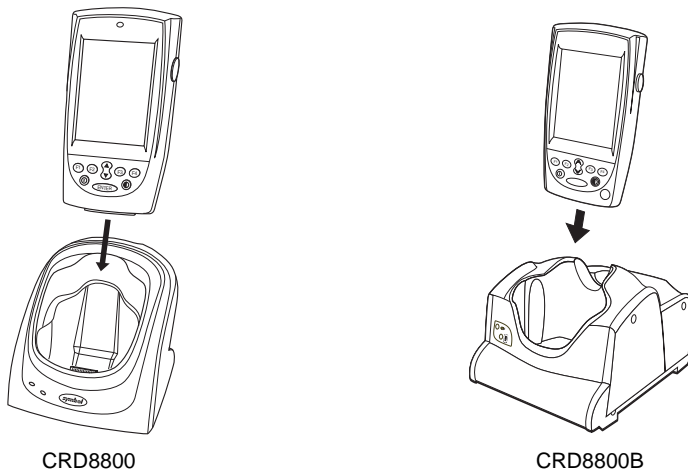


Figure 1-12. Inserting the Terminal into the Cradle

The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger capacity battery usually fully charges in approximately five hours.

Using the Four-Slot Cradles

To charge the terminal's battery using the Four-Slot Charging Cradle or the Four-Slot Ethernet Cradle:

1. Connect the cradle to a power source.

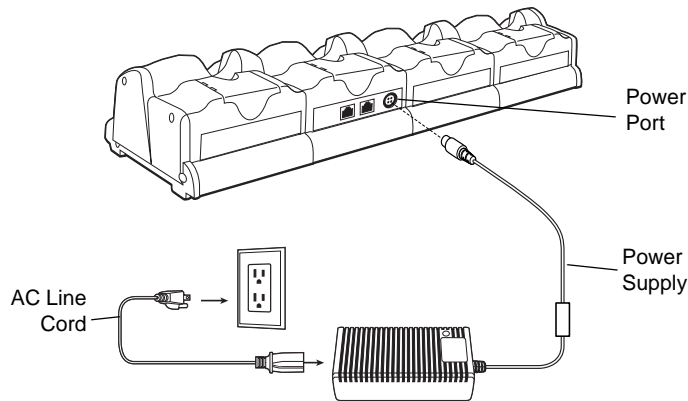


Figure 1-13. Connecting Power to the Four-Slot Cradle

2. Insert the terminal into the cradle. The terminal starts to charge automatically.

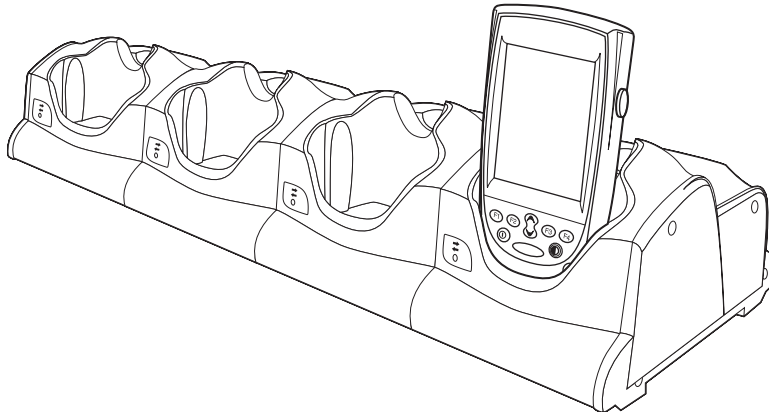


Figure 1-14. Inserting the Terminal into the Four-Slot Cradle

The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger capacity battery usually fully charges in approximately five hours.



Using the Universal Cable Cup

To charge the terminal's battery using the Universal Cable Cup with the vehicle charging adapter or the wall outlet power supply and line cord:

1. Ensure the locking tabs are in the open position (up).
2. Insert the terminal into the cable cup.
3. Press down on the two locking tabs.
4. Pull on the cable cup to ensure that it is securely attached to the terminal.

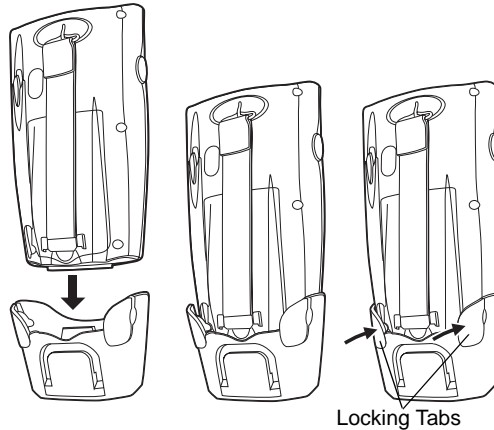


Figure 1-15. Attaching the Universal Cable Cup to the Terminal

5. Open the rubber cap covering the power port.

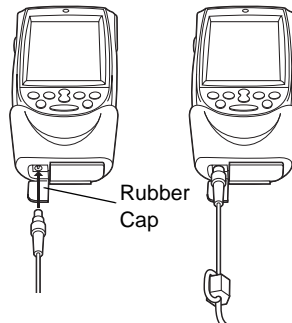


Figure 1-16. Connecting the Power Cable

6. Plug the power connector into the power port.

7. Wrap the cable around the cable support.

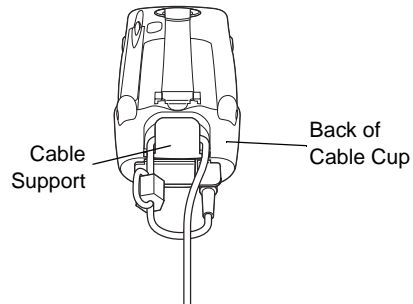


Figure 1-17. Securing the Cable

8. Connect the other end of the cable to a vehicle power adapter or appropriate power source.

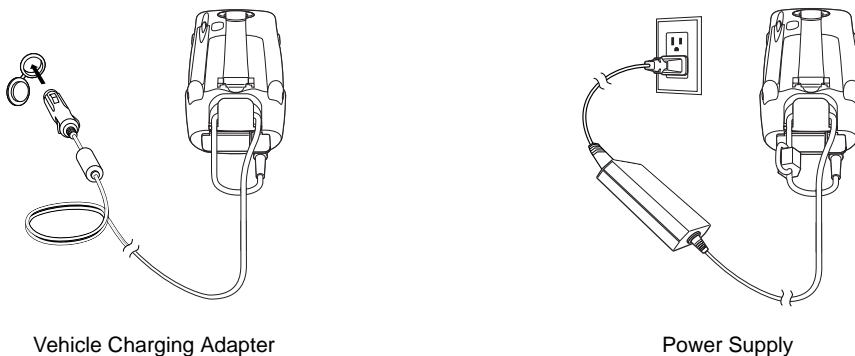
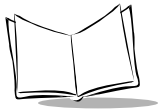


Figure 1-18. Connecting to Power Source

The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger capacity battery usually fully charges in approximately five hours.



Charging Spare Batteries

A spare battery can be charged using the single-slot cradle(s).

Note: You can also use a UBC adaptor to charge spare batteries. Refer to the UBC 2000 Universal Battery Charge Product Guide for more information.

Using the CRD8800 Single-Slot Cradle

The CRD8800 Single-Slot Serial Cradle charges only the standard battery.

1. Connect the cradle to a power source.

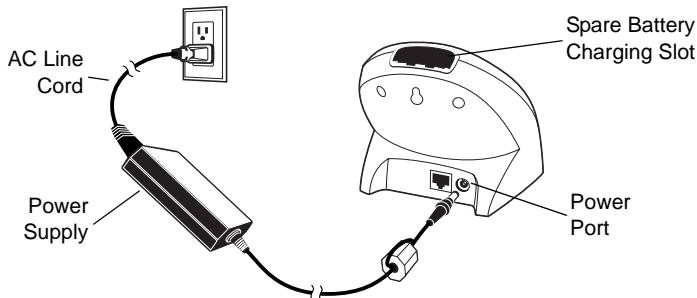


Figure 1-19. Connecting Power to the CRD8800 Cradle

2. Insert the battery into the spare battery charging slot on the back of the cradle. Position it with the charging contacts facing down (over charging pins) and gently press down on the battery to ensure proper contact.

The spare battery charging LED turns red to indicate that the spare battery is charging. The battery fully charges in approximately 2 1/2 hours. See *Charge LED Indicator* on page 1-19 for spare battery charging indications.

Using the CRD8800B Single-Slot Cradle

The CRD8800B Single-Slot Serial Cradle charges both the standard and larger capacity battery in the spare battery well.

1. Connect the cradle to a power source.

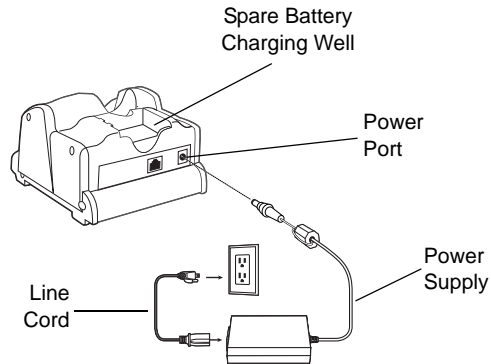
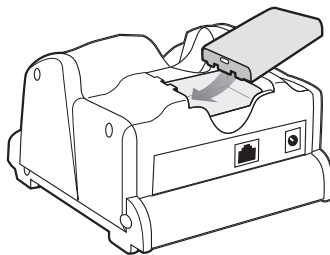
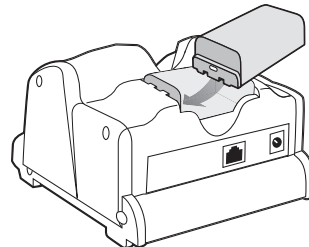


Figure 1-20. Connecting Power to the CRD8800B Cradle

2. Insert the battery into the spare battery charging well on the back of the cradle. Insert the contact end first and then press the back end into the well.



Standard Battery



Larger Capacity Battery

Figure 1-21. Inserting the Spare Battery into the Battery Well



The spare battery charging LED turns red to indicate that the spare battery is charging. The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger capacity battery usually fully charges in approximately five hours. See [Charge LED Indicator](#) on page 1-19 for spare battery charging indications.

Using the UBC Battery Adapter

1. Insert the appropriate battery adapter (up to four) into the UBC 2000 charger base.
2. Insert the battery into its appropriate adapter. Ensure the polarity markings on the battery (+, -) match with those of the adapter.

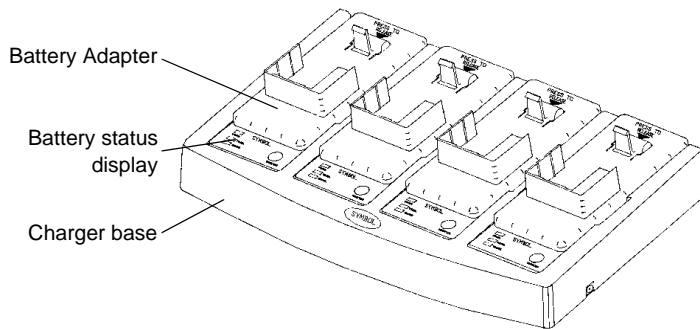


Figure 1-22. Inserting the Spare Battery

When the battery is inserted, the charging system begins the rapid charge cycle. When this cycle is completed, the “READY” indicator on the battery status display turns solid green, and the battery is charged to approximately 95% of its rated capacity. To attain 100% of its capacity the battery should remain in the charger for 3 hours. A charged battery may be stored in the charger indefinitely. Upon completion of the charging cycle, the charger switches to “Maintenance Mode” where it maintains the battery at 100% of its rated capacity.

Caution

Do not charge a battery that is below 0° C (32° F) or above 45° C (113° F).
Allow the battery to warm up to room temperature before charging.

Charge LED Indicator

Table 1-1. Charge LED Indicator

LED	Indication
Spare Battery Charging (Cradle LED)	
Off	No spare battery in slot; spare battery not placed correctly; cradle is not powered.
Solid red	Spare battery is charging.
Flashing red	Error in charging; check placement of spare battery.
Solid green	Charging is complete.

Starting the Terminal

Press the **Ⓢ** button to turn on the terminal. If the terminal does not power on, perform a hard reset. See [Resetting the Terminal on page 2-15](#).





When turning the terminal on for the first time, the terminal initializes its Flash File system, the Symbol splash screen displays for about a minute followed by the calibration screen. Note that these screens also appear every time you perform a hard reset.

Calibrating the Screen

To calibrate the screen so the cursor on the touch screen aligns with the tip of your stylus:

1. Remove the stylus from its storage silo on the back of the terminal.
2. Carefully press and briefly hold the tip of stylus on the center of each target that appears on the screen.



Note: To re-calibrate the screen at anytime, press  +  on a 15-key terminal or press  +  on a Standard 6-key terminal to launch the calibration screen application.

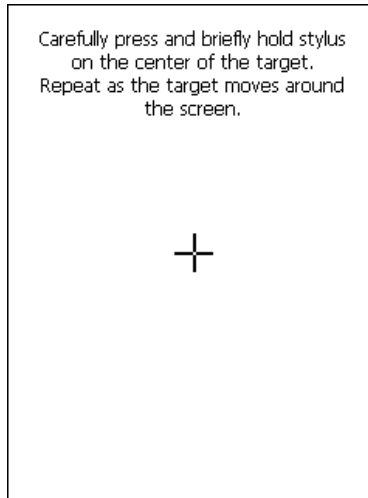


Figure 1-23. Calibration Screen

Checking Battery Power

To check whether the main battery or backup battery in the terminal is charged, tap *Start - Settings - Control Panel*. Double-tap the *Power* icon to display the *Power Properties* window. (If the *Battery* tab is not displayed, tap the *Battery* tab.)

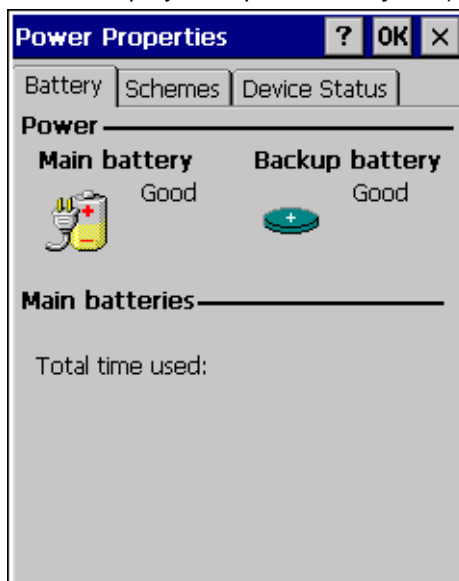
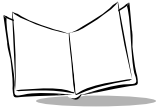


Figure 1-24. Power Properties Window

To save battery power, set your terminal to turn off after a specified number of minutes. Refer to *Power* on page 3-32 to set power management options.

Replacing the Handstrap

The terminal has a factory-installed handstrap which increases comfort when holding the terminal for extended periods of time. There are two types of handstraps depending upon the configuration of the terminal; a handstrap that has a clip that mounts to the terminal and a handstrap snaps onto the top connector. The handstrap may be removed or replaced, if damaged.



Handstrap with Clip

To replace the handstrap:

1. Unhook the bottom of the handstrap from the handstrap connector on the battery cover.
2. Remove the metal piece, threaded through the metal handstrap connector on the back of the terminal.

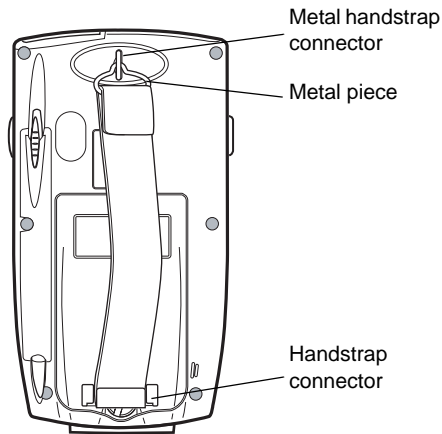


Figure 1-25. Handstrap Replacement

3. Thread the metal piece of the new handstrap through the metal handstrap connector on the back of the terminal.
4. Slide the flat metal piece into the handstrap connector on the battery cover.

Attaching the Neck Strap

To attach the neck strap to the terminal:

1. Thread the elastic band on the neck strap through the handstrap connector on the back of the terminal.
2. Slip the strap through the elastic band, and pull it through to secure the strap to the connector.

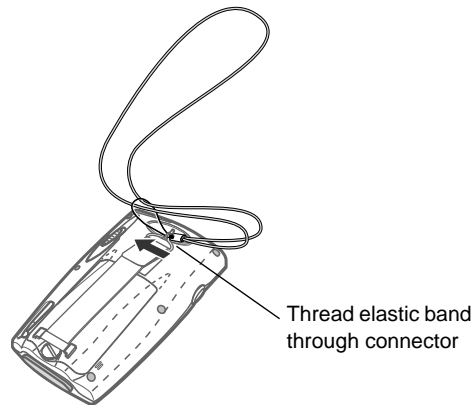
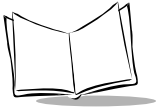


Figure 1-26. Attaching the Neck Strap



Configuring the Terminal

Refer to the following chapters to configure the terminal:

- For customizing the settings on your terminal, see [Chapter 3, Settings](#).
- To set up ActiveSync to synchronize your terminal with your host computer, see [Chapter 4, Communications](#).
- To configure your terminal for Spectrum24, see [Chapter 6, Spectrum24 Network Configuration](#).
- To install development software on your development PC, see [Chapter 8, Software Installation on Development PC](#).
- To configure your terminal using the Terminal Configuration Manager, see [Chapter 9, Configuring the Terminal](#).
- To set up AirBEAM to synchronize your terminal with your host server, see [Chapter 10, AirBEAM Smart](#).

Accessories

Universal Cable Cup

The UCC 8800 Universal Cable Cup provides the ability to connect the terminal to printers and vending machines, and to charge the terminal using the vehicle charging adapter or the wall outlet power supply and line cord.

Connecting to the Terminal

1. Ensure that locking tabs are in the open position (up).

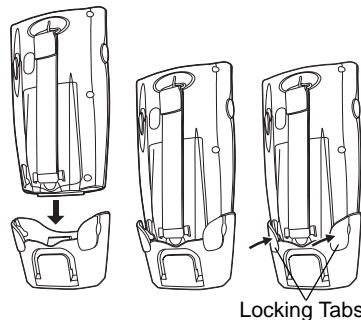


Figure 1-27. Insert Terminal Into Cable Cup

2. Insert the terminal into the cable cup.
3. Press down on the two locking tabs.
4. Pull on the cable cup to ensure that it is securely seated on the terminal.

Removing from the Terminal

1. Lift the two locking tabs.
2. Pull the cable cup from the terminal.

Connecting the Power Cable

1. Open the rubber cap covering the power port.

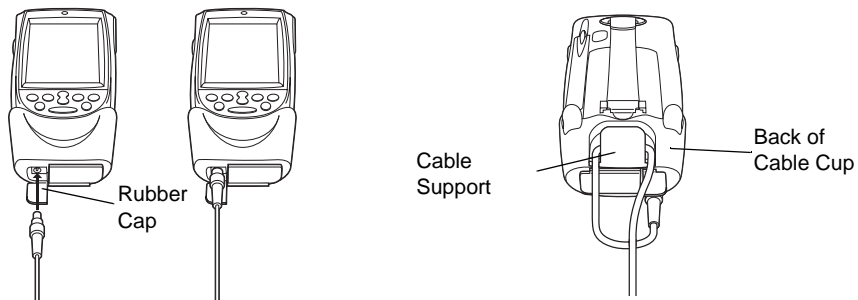
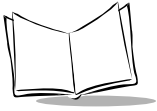


Figure 1-28. Connecting Power Connector to Cable Cup

2. Plug the power connector into the power port.
3. Wrap the cable around the cable support.
4. Connect the other end of the cable to the appropriate power source.



Connecting Communication Cable

1. Open the rubber cap covering the serial port.

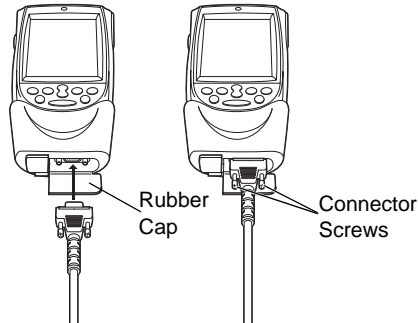


Figure 1-29. Connect Communication Cable to Cable Cup

2. Connect the cable connector to the serial port.
3. Secure the connector to the cable cup by tightening the two connector screws.
4. Connect the other end of the cable to the appropriate device.

Magnetic Strip Reader

The MSR8800 Magnetic Stripe Reader is an essential accessory for the PPT 8800 Series terminal, allowing easy data capture with the swipe of a magnetic stripe card. The magnetic stripe reader snaps easily on to the bottom of the PPT 8800 Series terminal, and can be easily removed when not in use.

Installing the MSR

1. Ensure that locking tabs are in the open position (up).
2. Insert the terminal into the MSR.
3. Press down on the two locking tabs.

4. Pull on the MSR to ensure that it is securely seated on the terminal.

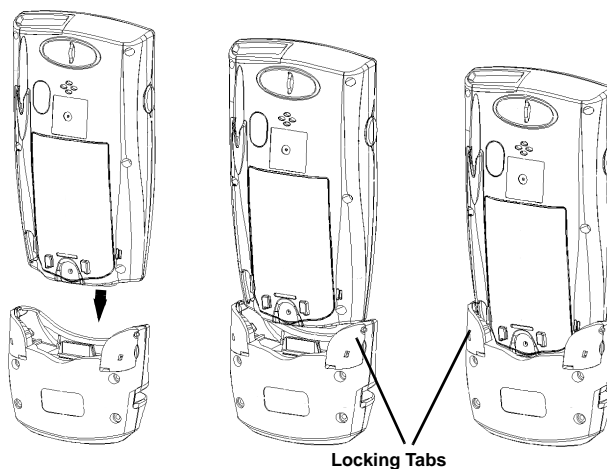


Figure 1-30. MSR Installation

Removing the MSR

1. Lift the two locking tabs.
2. Pull the MSR8800 from the terminal.

Using the MSR

In order to use the MSR, your terminal must have an application installed which accepts magnetic stripe data. Your terminal has a terminal emulator installed which can be used to access data acquired by the MSR.

To use the terminal emulator you must create a new session or connect using an existing one. Depending on your terminal's operating system, use the appropriate set of steps below to create a new terminal session.

1. Select *Start - Programs - Communication - Terminal*.
2. Double-tap the *Make a New Session* icon.
3. In the *Session Name* box, enter a name for the session.
4. In the *Select a Modem* list, select the name of your modem or *Hayes Compatible on Com1:*.
5. Tap *Configure* under your modem selection.
6. From the *Baud Rate:* drop-down list, select *9600*.



7. Under *Terminal*, check both checkboxes.
8. Check the *Manual Dial* checkbox.
9. Tap **OK**.
10. On the *Windows CE Networking* dialog, tap **OK**.
11. Enter a telephone number. It does not need to be a valid number.
12. Select the *Emulation* tab.
13. In the *Choose an emulation type* list, select *DEC VT-100* (default).
14. In the *Code page selection* list, select *Auto-detect* (default).
15. Check the *Local Echo* checkbox.
16. In the *Use small font by default* box, set your font preference.
17. In the *CR -> CR/LF* box, check the *Inbound* checkbox.
18. In the *Automatic Scrolling* box, set your scrolling preference.
19. Tap **OK**. A terminal emulation window opens.

Swipe the magnetic stripe card through the reader, ensuring the magnetic stripe on the card is positioned as shown. Data encoded on the magnetic stripe displays in the terminal window on the terminal.

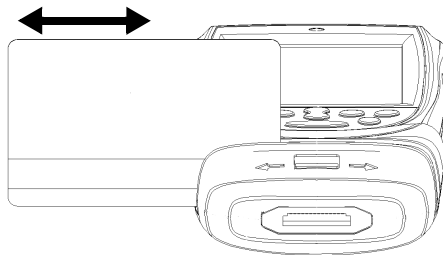


Figure 1-31. Swiping a Card

Note: The card may be swiped in either direction, from left to right, or from right to left. For best results, gently press down on the card while swiping to ensure contact with the bottom of the reader.

If the terminal is left idle long enough to go into the Suspend-Resume state, or the power is turned off and then on again, it may be necessary to close and restart the terminal program to reinitialize the serial port.

To disconnect the terminal emulation, select *File - Cancel*. The session you created appears as an icon in the Terminal folder. You can create a desktop shortcut for the session, and connect by double-tapping it.

Charging the Terminal's Battery

The terminal's battery can be charged while the MSR is installed on the bottom of the terminal, using the Serial Charging Cable (p/n 25-38383-01) and power supply (p/n 50-14000-107). The standard battery charges in approximately 2 1/2 hours.

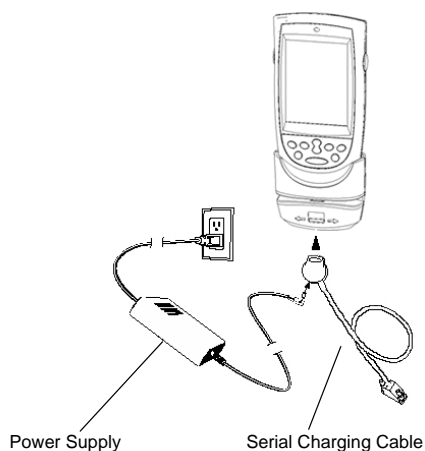
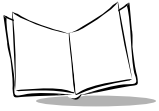
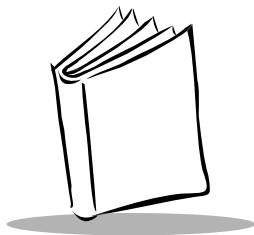


Figure 1-32. Charging the Terminal Using the MSR





Chapter 2

Operating the PPT 8800

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Introduction

This chapter provides basic instructions for using and navigating the terminal.

Using the Power Button






Press the  button to turn the terminal on and off. See *Starting the Terminal* on page 1-19.

Adjusting the Backlight

Standard 6-Key Configuration

Use the key combinations listed in [Table 2-1](#) to adjust the backlight.






Table 2-1. Standard 6-Key Keyboard Backlight Controls

Keys	Description
Press and hold 	Turn backlight on or off.
Press  + 	Decrease backlight (decrease brightness).
Press  + 	Increase backlight (increase brightness).

15-Key Configuration

Use the key combinations listed in [Table 2-2](#) to adjust the backlight.

Table 2-2. 15-Key Keyboard Backlight Controls

Keys	Description
Press and hold 	Turn backlight on or off.
Press  + 	Decrease backlight (decrease brightness).
Press  + 	Increase backlight (increase brightness).



Using the Stylus

Your terminal has a stylus for selecting items and entering information. The stylus functions as a mouse.

- **Tap:** Touch the screen once with the stylus to press option buttons and open menu items.
- **Double-Tap:** Touch the screen twice to execute application software.
- **Drag:** Hold the stylus on the screen and drag across the screen to select text and images. Drag in a list to select multiple items.

Using the Keyboard

The terminal has two keyboard configurations; a standard 6-key configuration and a 15-key configuration.

Standard 6-Key Configuration

The standard 6-key keyboard contains a power button, application keys, scroll keys and a function key. Refer to [Table 2-3](#) for descriptions for the keyboard buttons and keys.

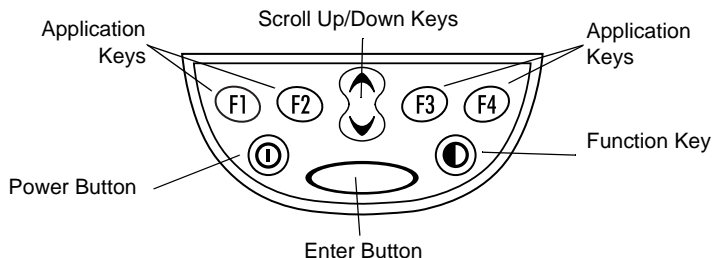


Figure 2-1. Standard 6-Key Configuration

Table 2-3. 6-Key Keyboard Actions










Key	Action
Application    	These keys can be assigned to an application program. Refer to <i>Program Button Assignment</i> on page 3-25 for default settings.

Table 2-3. 6-Key Keyboard Actions (Continued)

Key	Action
Scroll Up 	Moves up from one item to another. Increases the brightness of the backlight when simultaneously pressed with the Function key.
Scroll Down 	Moves down from one item to another. Decreases the brightness of the backlight when simultaneously pressed with the Function button.
Function 	Executes an operation when it's pressed with another key (keys) simultaneously, such as one of the Scroll keys.
Power 	Powers the terminal on and off and turns the backlight on and off when held.
Enter 	Executes a selected item or function.

15-Key Configuration

The 15-key keypad uses an alphanumeric keypad that produces the 26-character alphabet (A-Z, both lowercase and uppercase), numbers (0-9), function keys (F1 - F10) and assorted characters. The keyboard is color-coded to indicate which modifier key (ALPHA or FUNC) to press to produce a particular character or action. The keyboard default is numeric, producing numbers.

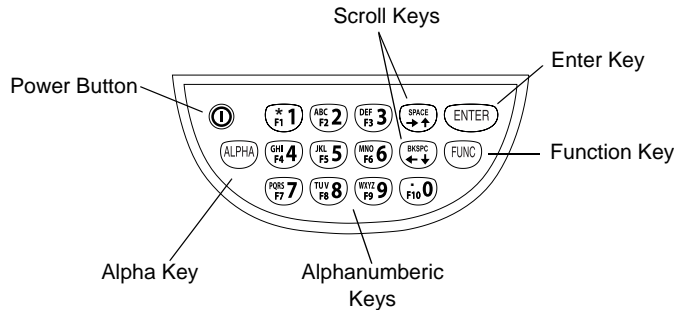
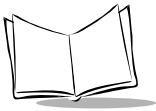


Figure 2-2. 15-Key Configuration

Table 2-4. 15-Key Keyboard Actions







Key	Action
Alpha 	Press Alpha to toggle between alpha lower case, alpha uppercase and numeric modes. The default is numeric mode. Pressing the ALPHA key cycles through the input modes (Alpha Lowercase, Alpha Uppercase, Numeric). In both alpha modes, pressing a key produces the yellow letter on that key; in numeric mode, pressing a key produces the white number on that key. Refer to Table 2-5 .
Scroll Up 	Moves the cursor up on the window in the numeric mode. Moves the cursor to the right in the FUNC mode. In the alpha mode, is a space key.
Scroll Down 	Moves the cursor down on the window in the numeric mode. Moves the cursor to the left in the FUNC mode. In the alpha mode, is a backspace key.
Function 	Execute an operation when pressed with another key simultaneously, such as one of the Scroll buttons. Refer to Table 2-5 . Executes the same function in both the alpha and numeric modes.
Power 	Powers the terminal on and off and turns the backlight on and off when held.
Enter 	Executes a selected item or function.

Table 2-5. 15-Key Keyboard Input Modes

Key	Numeric Mode		Alpha Lowercase Mode				Alpha Uppercase Mode			
		FUNC+ Key	1st Press	2nd Press	3rd Press	4th Press	1st Press	2nd Press	3rd Press	4th Press
1	1	F1	@	-	_	/	:	?	!	,
2	2	F2	a	b	c		A	B	C	
3	3	F3	d	e	f		D	E	F	
4	4	F4	g	h	i		G	H	I	
5	5	F5	j	k	l		J	K	L	
6	6	F6	m	n	o		M	N	O	
7	7	F7	p	q	r	s	P	Q	R	S
8	8	F8	t	u	v		T	U	V	
9	9	F9	w	x	y	z	W	X	Y	Z
0	0	F10								
UP	UP	RIGHT	SPACE				SPACE			
DOWN	DOWN	LEFT	BK SPC				BK SPC			
ENTER	ENTER		ENTER				ENTER			
Note: The key functions can be changed by an application. The keyboard may not function exactly as described.										

Note: For detailed keyboard configurations including ASCII values and VK codes, see [Appendix B, Keyboard Maps](#).

For information about using the soft keyboard from the input panel, refer to *Entering Information* on page 2-12.



Desktop

When you power on the terminal, the desktop window appears.



Figure 2-3. PPT 8800 Desktop

Major functions on the desktop include:

- **Recycle Bin:** Dragging and dropping an unnecessary file on this icon transfers it to Recycle Bin folder and the file is stored there until you empty the bin for deletion.
- **My Computer:** Double tapping on this icon opens My Computer.
- **Internet Explorer:** Double tapping on this icon open Internet Explorer application.
- **Taskbar:** This contains the Start Button, Open Programs, Status Icons, Date/Time Properties and the Desktop Button.

Taskbar

The *Taskbar* at the bottom of the window displays the active programs, current time, battery status and communication status.

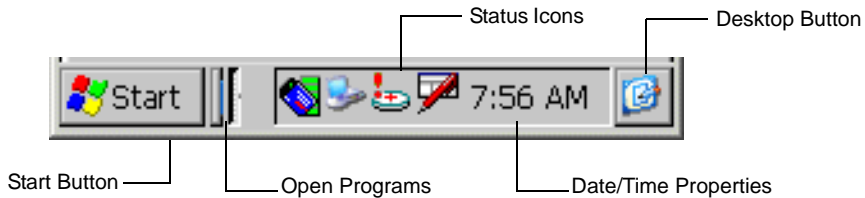


Figure 2-4. Taskbar

Start Button

The *Start* button is used to quickly start a program, find a file, access the settings window or access help.

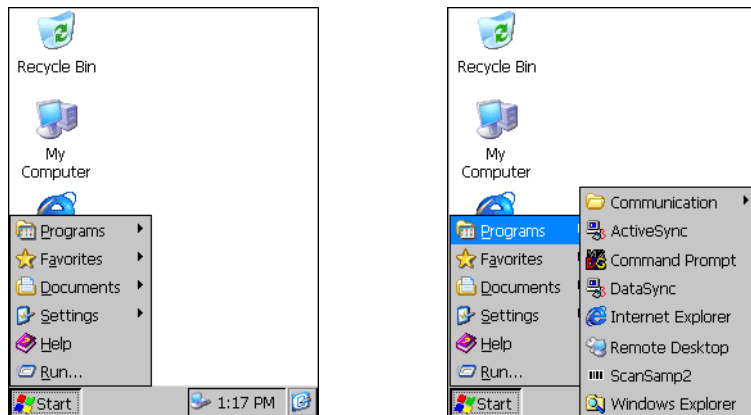


Figure 2-5. Start Menu

- Tapping *Programs* displays Programs menu. See [Chapter 5, Applications](#) for detailed information on available programs.
- Tapping *Favorites* displays a list of files as your Favorites.
- Tapping *Documents* displays files you have used or edited recently.
- Tapping *Settings* displays Settings menu. See [Chapter 3, Settings](#) for detailed information on terminal settings.



- Tapping *Help* opens Windows CE Help.
- Tapping *Run* opens Run... dialog to open a program.

Open Programs

If you have a number of programs open, you can use the buttons on the taskbar to toggle between the open programs. Tapping on a button opens the associated program. These buttons only appear if a program is open.

Status Icons

Status icons are shown in the taskbar to indicate present status of the terminal. Double tapping each status icon displays the corresponding setup window and enables you to change or adjust its settings from the window.

Table 2-6. Status Icons












Status Icon	Description
	Indicates the current time.
	This icon indicates that the keyboard input panel is selected.
	This icon indicates that the keyboard input panel is hidden.
	This icon indicates that the main battery is under charged or that the terminal is operating on AC power. Double tapping on this icon opens the Power Properties window.
	This icon is displayed when the memory backup battery level is low. Charge the battery.
	This icon is displayed when the memory backup battery level is very low. Charge the battery immediately.
	This icon is displayed when the main battery level is low. Charge the battery.
	This icon is displayed when the main battery level is very low. Charge the battery immediately.

Table 2-6. Status Icons (Continued)

Status Icon	Description
	It is displayed when the terminal is connected to a host computer with a serial cable.
	Spectrum24 wireless connection status icon. Double-tap to open the Mobile Companion utility (PPT 8846 Only).
	Bluetooth icon. Tap to open the <i>Bluetooth</i> menu (PPT 8860 only).

Date/Time Properties

Double-tapping on the current time opens the *Date/Time Properties* window. Use this window to customize the date and time for the terminal.

Desktop Button

The *Desktop* button allows you to hide all open programs and display the desktop.

Taskbar and Start Menu Settings

The behavior of the taskbar is controlled by the *Taskbar and Start Menu Properties* window. To open the window:

1. Select *Start - Settings - Taskbar and Start Menu...* .
2. Select the *General* tab.
3. To enable the taskbar to always appear on top, select *Always on top* checkbox.
4. To allow the taskbar to disappear (hide) when not being used, select *Auto hide* checkbox. To show the taskbar, tap the bottom of the display.
5. To display the clock on the taskbar, select *Show Clock* checkbox.



Entering Information

To enter information, you may:

- Use the keypad (15-key configuration only).
- Use the input panel (soft keyboard) to enter typed text.
- Scan bar code data into data fields.
- Use Microsoft® ActiveSync® to synchronize or copy information from your host computer to your terminal. For more information on ActiveSync, see [Chapter 4, Communications](#) or ActiveSync Help on your host computer.

Entering Information Using 15-Key Keypad

The 15-key keypad uses an alphanumeric keypad that produces the 26-character alphabet (A-Z), numbers (0-9), Function keys (F1 - F10) and assorted characters. The keyboard is color-coded to indicate which modifier key (Alpha or function) to press to produce a particular character or action. The keyboard default is numeric, producing numbers. See *Using the Keyboard* on page 2-4 and [Appendix B, Keyboard Maps](#) for keyboard functions.

Entering Information Using the Keyboard Input Panel

Use the keyboard input panel to enter information in any program. To show or hide the soft keyboard, tap the *Keyboard Input Panel* icon:

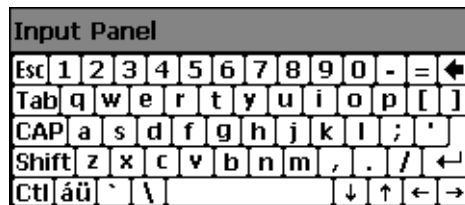


Figure 2-6. Input Panel

To change keyboard input panel settings refer to *Input Panel* on page 3-22.

To type with the soft keyboard:

1. Double-tap the *Keyboard Input Panel* icon in the taskbar
or
Press Function + F2
or

Single-tap the *Keyboard Input panel* icon in the taskbar and tap *Keyboard* in the menu.

2. On the keyboard input panel, tap the keys with your stylus.

Entering Data via the Bar Code Scanner (Scan Wedge)

Using the Scan Wedge program, the integrated bar code scanner can scan data into data fields in the same way data is entered via the keyboard. See *ScanSamp2* on page 5-14 for more information.

Scanning

The terminal has an integrated scanner which allows you to collect data by scanning one or two-dimensional bar codes. See [ScanSamp2](#) on page 5-14 for a sample scanning application.

To scan bar codes with the PPT 8800:

1. Ensure that your terminal is loaded with a scanning application.
2. Aim the scan exit window at the bar code.
3. Press either the right or left scan trigger. Make sure the red scan beam covers the entire bar code. The green scan LED lights and a beep sounds to indicate a successful decode.

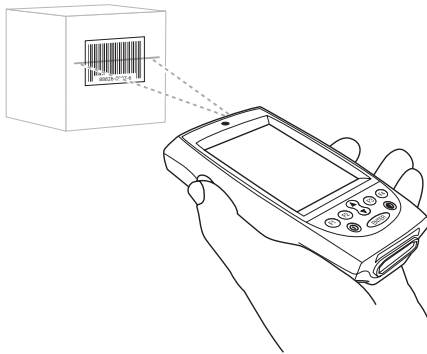
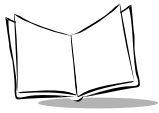


Figure 2-7. Scanning



Scan LED Indicator

See *Parts of the Terminal* on page 1-4 for the location of the Scan LED on the terminal.

Table 2-7. Scan LED Indicator

LED Status	Indication
Off	Not scanning.
Solid Red	Laser enabled. Scanning in process.
Solid Green	Successful decode.

Resetting the Terminal

If the terminal stops responding to input, reset it.


Performing a Soft Reset



A soft reset restarts the terminal and saves all stored records and entries.

Caution

Files that remain open during a soft reset may not be retained.

DO NOT perform a soft reset if the terminal is suspended. Press the power button to wake the terminal.

To perform a soft reset on the Standard 6-key keypad, press the Enter and  keys while holding down either the left or right scan trigger and then releasing the keys.

To perform a soft reset on the 15-key keypad, press  and  keys while holding down either the left or right scan trigger and then releasing the keys.

Performing a Hard Reset

A hard reset also restarts the terminal, but erases all stored records and entries. *Therefore, never perform a hard reset unless a soft reset does not solve the problem.*

Note: *You can restore any data previously synchronized with a computer during the next ActiveSync operation. See [Chapter 4, Communications](#) for detailed ActiveSync instructions.*

To perform a hard reset:

1. Remove the battery cover.



2. While holding down the Function key, use the stylus to gently press the reset button.

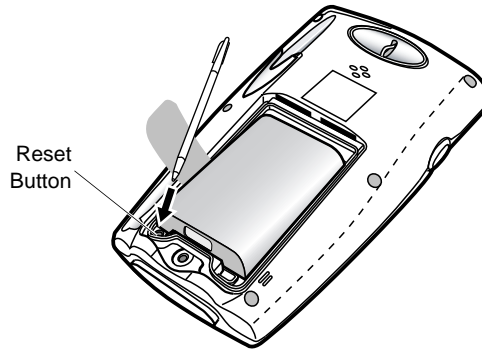
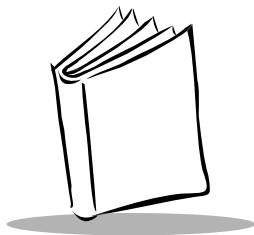


Figure 2-8. Reset Button

3. Release the Function key.
4. Replace the battery cover.
5. Press **①**.
6. As the terminal initializes its Flash File system, the Symbol splash screen displays for about a minute.
7. Calibrate the screen. See [Calibrating the Screen](#) on page 1-19 to perform an initial setup of the terminal.

Caution

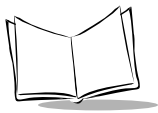
With a hard reset, formats, preferences, and other settings are restored to their factory default settings.



Chapter 3 Settings

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Introduction

This chapter provides basic instructions for customizing your terminal by adjusting settings.

Adjusting Settings

To view available options for your terminal settings, tap *Start - Settings - Control Panel*.

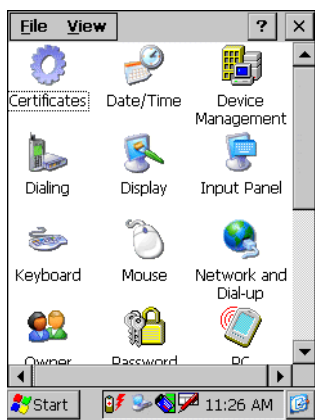




Figure 3-1. Control Panel Window

Table 3-1 lists the applications available in the *Control Panel*.

Table 3-1. Control Panel Applications

Icon	Description
 Certificates	View and modify digital certificates which are used by some applications for establishing trust for secure communications. See <i>Certificates</i> on page 3-7 for more information.
 Date/Time	Change date, time and time zone information. See <i>Date/Time</i> on page 3-8 for more information.

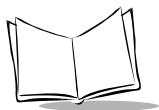


Table 3-1. Control Panel Applications (Continued)

















Icon	Description
 Device Management	Configure device management, install and view available software. See <i>Device Management</i> on page 3-9 for more information.
 Dialing	Set dialing properties for modem communication and change telephony settings. See <i>Dialing</i> on page 3-14 for more information.
 Display	Change desktop background, appearance, backlight, and brightness. See <i>Display</i> on page 3-17 for more information.
 Input Panel	Switch input methods and set input options. See <i>Input Panel</i> on page 3-22 for more information.
 IrDA	Turns the IrDA port on or off to allow the Bluetooth radio access to two more COM ports (PPT 8860 only). See <i>IrDA</i> on page 3-23 for more information.
 Keyboard	Change keyboard repeat delay and rate. See <i>Keyboard</i> on page 3-24 for more information.
 Mouse	Adjust double-click sensitivity for both the speed and timing.
 Network and Dial-up	Connect to other computers, networks, and the Internet through a modem. See <i>Certificates</i> on page 3-7 for more information.

Table 3-1. Control Panel Applications (Continued)

Icon	Description
 Owner	Change owner's personal profiles. See <i>Owner</i> on page 3-27 for more information.
 Password	Change owner's password and set security options. See <i>Password</i> on page 3-30 for more information.
 PC Connection	Change settings for connectivity of a host computer. See <i>PC Connection</i> on page 3-31 for more information.
 Power	View battery status and change power management options. See <i>Power</i> on page 3-32 for more information.
 Regional Settings	Change how numbers, currencies, dates, and times are displayed. See <i>Regional Settings</i> on page 3-35 for more information.
 Remove Programs	Remove loaded programs from RAM. See <i>Remove Programs</i> on page 3-38 for more information.
 Storage Manager	Manage storage media and disk partitions. See <i>Storage Manager</i> on page 3-39 for more information.
 Stylus	Calibrate the touch screen and adjust double-tap timing. See <i>Stylus</i> on page 3-41 for more information.

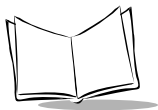





Table 3-1. Control Panel Applications (Continued)

Icon	Description
 Symbol Settings	Change settings unique to the PPT 8800. See <i>Symbol Settings</i> on page 3-43 for more information.
 System	View system information, and change memory settings. See <i>System</i> on page 3-48 for more information.
 Volume & Sounds	Set event sounds and volume options. See <i>Volume & Sounds</i> on page 3-52 for more information.

To change a terminal setting:

1. Tap *Start - Settings - Control Panel*. The *Control Panel* window appears.
2. Double-tap on the item for which you would like to change settings.
3. If necessary, tap on the each tab to switch displayed window.
4. Change setting(s).
5. Tap **OK**. The *Properties* window closes.

Note: Depending on what you set, you may be required to reset the terminal.

Certificates

Certificates are used by some applications for establishing trust and for secure communications. Certificates are signed and issued by certificate authorities and are valid for a prescribed period of time. Windows CE manages multiple certificate stores.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Certificates* icon.



Figure 3-2. Certificates Window

3. In the *Stores* tab, select the certificate store you wish to view or modify from the drop-down list.
 - The *My Certificates* store contains your personal certificates, which you use to identify yourself.
 - *Intermediate* certificate authorities that help establish a chain of trust are stored in the *Other Authorities* store.
 - The *Trusted Authorities* store lists the top-level certificates for authorities you trust.
4. To add a certificate or associated private key to the selected store, tap *Import*.
5. To view more details of the selected certificate, such as the expanded name or expiration date, tap *View*.
6. To delete the selected certificate from the store, tap *Remove*.
7. Tap **OK** for the settings to take effect.



Date/Time

Use the *Date/Time Properties* window to change the date, time and time zone information.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Date/Time* icon.

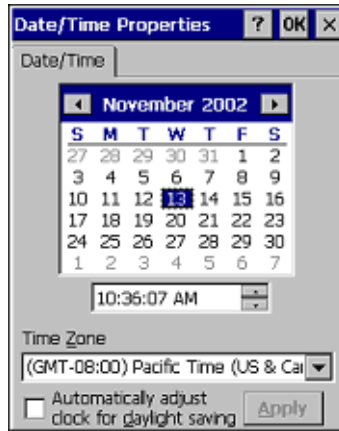


Figure 3-3. Date/Time Properties Window

3. To set the month in the *Date/Time* tab, select the arrows on either side of the month shown, or tap on the month and select from a list of months.
4. To set the date, select it in the calendar.
5. To set the time, enter it in the box under the month calendar.
6. To change the time zone, select it from the list labeled *Time Zone*.
7. Tap **Apply** or **OK** for the settings to take effect.

Device Management

Device Management is one of the key requirements for deploying embedded devices in the Enterprise scenario. A wide variety of enterprises can benefit from having devices that are manageable off the shelf. Managing devices involves being able to distribute software, keep track of software and hardware, inventory, and configure devices remotely.

Current methods of installing files or applications on Microsoft Windows CE-based devices require user interaction and offer no way of keeping a device updated over time, nor do they offer an administrator an easy way to centrally distribute software, and manage hardware and software.

A download/install engine that allows users to receive software and notifications when there are new applications or Operating System (OS) updates is the basis for a device management client. To enable configuration and customized management, the device management system also allows the downloading and running of scripts. The Windows CE Device Management Client works with the Microsoft Systems Management Server (SMS), one of the premier Enterprise management software offerings in the industry.

Use Device Management settings to configure device management, to install and view available software, and to find information about the Device Management client and server.

Resetting the Device Management Server

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Device Management* icon.



3. Select the *Configure* tab.

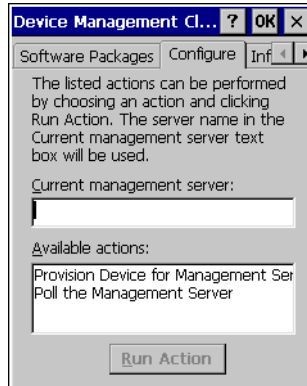


Figure 3-4. Device Management - Configure Tab

4. In the *Current management server* field, enter the name of the new device management server.
Your System Administrator can supply this name.
5. Tap **OK**. This closes the window and sets up the next poll to contact the new server.

Note: This does not re-provision the device. If you are prompted to re-provision the device, see [Provisioning](#).

Provisioning

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Device Management* icon.
3. Select the *Configure* tab.
4. In *Current management server* field, enter the name of the new device management server.
Your System Administrator can supply this name.
5. From the list of *Available Actions*, select *Provision Device for Management Server*.
6. Tap the **Run Action** button. This contacts the Management Server and brings up further provisioning steps. It also automatically schedules a new Poll task.

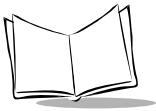
Note: *Provisioning requires that an application capable of displaying html pages is available.*

Polling the Management Server

Ensure that provisioning the terminal is complete before polling.

1. In the *Device Management* window, select the *Configure* tab.
2. Enter the name of the correct device management server in the *Current management server* field.
3. Ensure that a network connection is available.
4. From the list of *Available actions*, select *Poll the Management Server*.
5. Tap the **Run Action** button. This schedules a poll task that contacts the Management Server immediately.

Note: *You can do polling only if provisioning is already complete. A network connection should be available. If the network connection is not available, the poll is automatically rescheduled after a default interval.*



Installing Optional Packages

If your system administrator has made optional packages available for the terminal, you can install them using the following steps:

1. Select the *Software Packages* tab.



Figure 3-5. Device Management Window - Software Packages Tab

2. Choose the package to install from the listed packages.
3. Tap the **Install** button. This causes the Management Server to download the package.

Viewing Installed Packages

To view packages that the Management Server installed on the terminal:

1. Select the *Software Packages* tab.
2. Tap the **View downloaded packages** button. This launches a new window that displays the downloaded packages.

Information About Device Management

Select the *Information* tab to display:

- Device Management client version and ID number
- Management Server Name and ID
- Polling times.

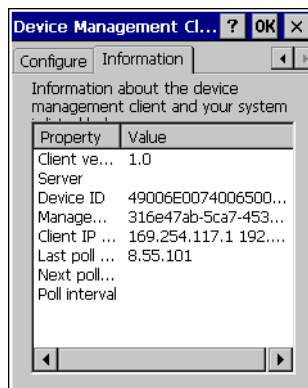
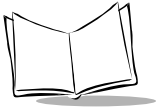


Figure 3-6. Device Management - Information Tab



Dialing

Use the *Dialing Properties* window to set dialing properties for modem communication and change telephony settings.

Adjusting Dialing Location Settings

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Dialing* icon.



Figure 3-7. Dialing Properties Window

3. In the *Location:* drop-down list, select the location for which you want to change settings.
To create a new location, tap the **New** button. Enter the name of the location, and then press the Enter key.
To remove a location, select the location from the drop-down list and tap **Delete**.
4. Enter or edit the area code and local country code as needed.
5. Select *Tone dialing* or *Pulse dialing*. (Most phone lines are tone.)
6. To automatically disable call waiting, select the *Disable call waiting* check box. Then select the appropriate number sequence from the *dial* drop-down list, or enter a new sequence.

Adjust Dialing Patterns

To edit dialing patterns:

1. In the *Dialing Properties* window, tap **Edit**.



Figure 3-8. Edit Dialing Patterns Window

2. Using the codes listed in [Table 3-2](#), revise the dialing patterns as required.

Note: *If you need to use characters other than the ones listed in [Table 3-2](#), use manual dialing.*
Hyphens and spaces in dialing strings are ignored.
Some modems may not respond to the characters listed, even though your terminal lets you add them to the dial string.

3. Press the enter key to save settings or tap **X** to close without saving the settings.

Table 3-2. Dialing Characters

To	Enter
Dial country code (specified by the dialing program)	E
Dial area code (specified by the dialing program)	F
Dial local number (specified by the dialing program)	G
Insert a pause (typically 2 seconds)	, (comma)
Wait for credit card tone (specified by the dialing program)	\$(dollar sign)
Wait for second tone (typically used after \$)	W
Tone-dial the following numbers	T

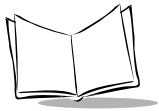


Table 3-2. Dialing Characters (Continued)

To	Enter
Pulse-dial the following numbers	P
Transfer to another extension (0.5 sec on hook, 0.5 sec off hook)	! (hookflash)
Wait for “quiet answer” (typically indicated by 6.5 seconds of silence followed by a ringing tone)	@
Use special controls on some systems (tone only)	ABCD or * or #

Display

Use the *Display Properties* window to change desktop background, appearance, backlight and brightness settings.

Selecting a Background Image

To change the background image on the desktop:

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Display* icon. Select the *Background* tab.

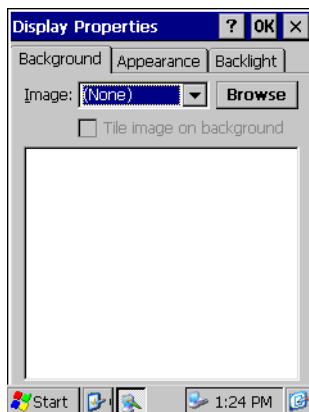


Figure 3-9. Display Properties - Background Tab

3. From the *Image:* drop-down list, select an image you want as the background of the desktop. To locate an image in another folder, tap **Browse**.
4. To have the image cover the entire background, select *Tile image on background*.
5. Tap **OK** to save settings.

Modifying the Desktop's Appearance

The following sections describe how to change the appearance of the desktop.

Changing the Desktop's Color Scheme

To change the color scheme of the desktop:



1. Select the *Appearance* tab.



Figure 3-10. Display Properties - Appearance Tab

2. From the *Scheme:* drop-down list, select a scheme.
3. View your choice in the preview box. If you like the scheme, tap **Apply**.

Creating a Custom Color Scheme

To create a custom scheme for your desktop:

1. Select the *Appearance* tab.
2. From the *Item:* drop-down list, select a display item.
3. Tap the square next to the *Item:* drop-down list.
4. From the *Basic colors:* list, select a color, and tap **OK**.
5. View your color selection(s) in the preview box.
6. To save the scheme, tap **Save**.
7. In the *Save scheme As* box, enter a name for the scheme, and tap **OK**.
8. Tap **Apply**.

Changing Backlight Settings

Change the backlight settings to conserve battery power or to turn off the backlight when the terminal is idle. You also have options to turn on the backlight when you tap the screen or press a button.

1. Select the *Backlight* tab.

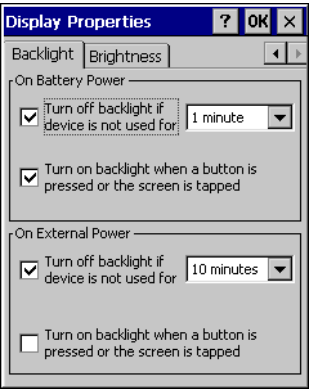


Figure 3-11. Display Properties - Backlight Tab

2. Make desired selections. Refer to [Table 3-3](#) for backlight settings.

Note: *When you perform a hard reset all settings selected in this view return to the default settings. The settings are maintained after a soft reset.*

Table 3-3. Backlight Settings

Status	Conditions of light On/Off	Default (Hard Reset)
On Battery Power	Select the <i>Turn off backlight if device is not used for</i> checkbox to turn off the backlight after a certain period of time has passed unused. Period of time can be selected from the list. Available timings are 10 sec, 30 sec, 1 min, 2 min, 3 min, 4 min and 5 min.	Checkbox is selected. Default time is one minute.
	Select the <i>Turn on backlight when a button is pressed or the screen is tapped</i> checkbox to turn on the backlight when a button is pressed or the screen is tapped.	Checkbox is not selected.

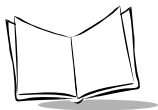


Table 3-3. Backlight Settings (Continued)

Status	Conditions of light On/Off	Default (Hard Reset)
On External Power	Select the <i>Turn off backlight if device is not used for</i> checkbox to turn off the backlight after a certain period of time has passed unused. Period of time can be selected from the list. Available timings are 1 min, 2 min, 3 min, 4 min, 5 min, 6 min, 7 min, 8 min, 9 min and 10 min.	Checkbox is selected. Default time is one minute.
	Select the <i>Turn on backlight when a button is pressed or the screen is tapped</i> checkbox to turn on the backlight when a button is pressed or the screen is tapped.	Checkbox is not selected.

Changing the Backlight Brightness

To change the brightness of the backlight:

1. Select the *Brightness* tab.

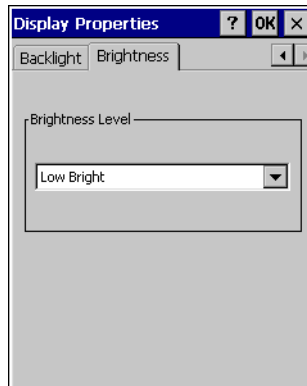


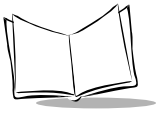
Figure 3-12. Display Properties - Brightness Tab

2. Select one of the brightness levels listed in [Table 3-4](#).

Table 3-4. Brightness Settings

Brightness	Comment
Power save	Power-saving mode. Default after hard reset.
Low Bright	Slightly dark
Med Bright	Medium
High Bright	Slightly bright
Super Bright	Very bright

Note: Backlight brightness goes to “Power save” automatically when the battery is low, regardless of the setting.



Input Panel

Use the *Input Panel Properties* window to switch input methods and set input options.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Input Panel* icon.

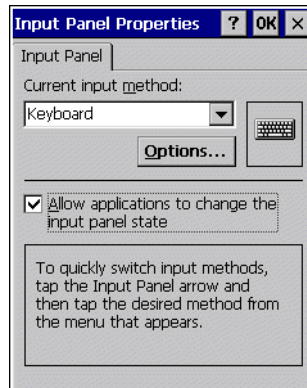


Figure 3-13. Input Panel Properties

3. From the *Current input method:* drop-down list, select the input method.
4. Tap **Options**.

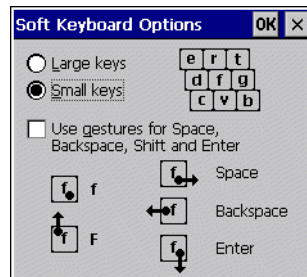


Figure 3-14. Soft Keyboard Options Window

5. Make the desired changes to the settings.
6. Tap **OK**.
7. Tap **OK** to apply the changes.

IrDA

Use the *IrDA Settings* window to enable or disable the IrDA.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *IrDA* icon. The *IrDA Settings* window appears.

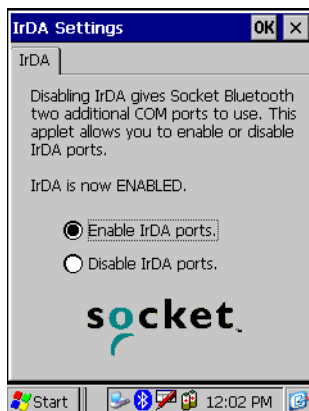
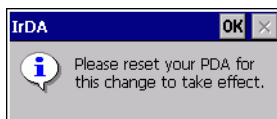
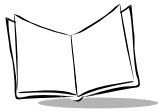


Figure 3-15. IrDA Settings Window

3. Select either *Enable IrDA ports* or *Disable IrDA ports* radio button.
4. Tap **OK**. A confirmation box appears requesting to reset the terminal. Tap **OK**.



5. Perform a soft reset. See *Resetting the Terminal* on page 2-15.



Keyboard

Use the *Keyboard Properties* window to change the keyboard repeat rate and delay. You can also assign a function to each key on the terminal's keyboard in this window.

Adjusting Keyboard Repeat Settings

To adjust the keyboard repeat rate:

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Keyboard* icon.
3. Select the *Repeat* tab.

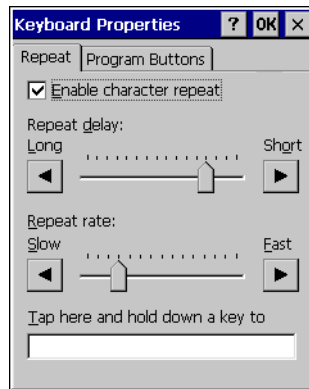


Figure 3-16. Keyboard Properties - Repeat Tab

4. Tap the *Enable character repeat* check box.
5. To change the amount of time between depressions before repetition starts, adjust the *Repeat delay* slider.
6. To change the repeat rate, adjust the *Repeat rate* slider.
7. Test your new settings in the text box provided.
8. Tap **OK** to apply the changes.

Program Button Assignment

Note: In addition to key functions, you can assign an application to a key. Then you can open a frequently used application by pressing one key.

To assign a function to a key on the keypad:

1. Select the *Program Buttons* tab.

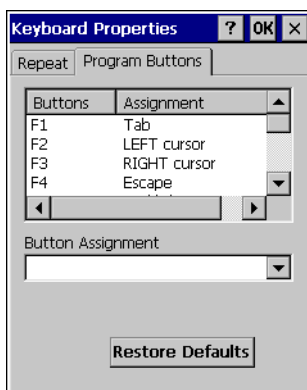


Figure 3-17. Keyboard Properties - Program Buttons Tab

2. Select a key from the *Buttons* list.
3. Select a key or application from the *Button Assignment* drop-down list. [Table 3-5](#) lists available options.

Table 3-5. Available Button Functions

Function	Description
<None>	No settings.
Escape	Closes an application, a file, or a window.
Tab	Switches fields.
Enter	Fixes data or command input. Behavior after fixing depends on an application.
Caps	Switches back and forth between upper cases and lower cases for alpha input mode.

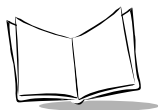


Table 3-5. Available Button Functions (Continued)

Function	Description
Backlight	Turns backlight On/Off.
Decrease brightness	Decreases brightness of backlight.
Increase brightness	Increases brightness of backlight.
UP cursor	Moves the cursor up a line.
DOWN cursor	Moves the cursor down a line.
RIGHT cursor	Moves the cursor to the right one letter.
LEFT cursor	Moves the cursor to the left one letter.
Space	Inserts a space after the cursor.
Back Space	Deletes a letter in front of the cursor.
Home	Moves the cursor to the front of text line.
End	Moves the cursor to the end of the text line.
Insert	Switches back and forth between insert mode and write-over mode.
Delete	Deletes a letter in the position of the cursor.
<User application>	Assigns an application to the key.
Windows Explorer	Opens Windows Explorer.
Internet Explorer	Opens Internet Explorer.
Recalibrate	Opens the Calibration screen to readjust the touch screen.
Soft keyboard	Opens the soft keyboard.
Volume	Opens the <i>Volume & Sounds Properties</i> window to adjust volume settings.

4. Tap **OK** to apply the changes.

To restore defaults at anytime tap **Restore Defaults**. Defaults are also restored when you hard reset the terminal. [Table 3-6](#) lists the default button/key assignments.

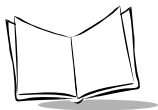
Table 3-6. Default Button Assignments

Standard 6-key Keypad		15-key Keypad	
Button/Key	Default	Button/Key	Default
Trigger	Trigger	Trigger	Trigger
Enter	Enter	Enter	Enter
F1	Tab	F1	<None>
F2	LEFT cursor	F2	<None>
F3	RIGHT cursor	F3	<None>
F4	Escape	F4	<None>
Func + F1	<None>	F5	<None>
Func + F2	Soft keyboard	F6	Recalibrate
Func + F3	<None>	F7	Decrease brightness
Func + F4	Recalibrate	F8	Increase brightness
		F9	Escape
		F10	Tab

Owner

Use the *Owner Properties* window to enter information about the owner. The information can be displayed when the terminal is turned on. To enter information:

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Owner* icon.



3. Select the *Identification* tab.

The screenshot shows the 'Owner Properties' dialog box with the 'Identification' tab selected. The dialog has three tabs: 'Identification', 'Notes', and 'Network ID'. The 'Identification' tab contains the following fields: 'Name:' (text box), 'Company:' (text box), 'Address:' (text box), 'Work phone:' (text box), 'Home phone:' (text box), 'At power-on' (checkbox), and 'Display owner identification' (checkbox). The 'At power-on' checkbox is currently checked.

Figure 3-18. Owner Properties Window - Identification Tab

4. Fill in or edit the data as desired.
5. To have this information displayed when you start the terminal, select the *Display Owner Identification* check box.
6. To add more information, select the *Notes* tab and enter information in the *Notes* box.
To include this information on startup, select *Display owner notes*.

The screenshot shows the 'Owner Properties' dialog box with the 'Notes' tab selected. The dialog has three tabs: 'Identification', 'Notes', and 'Network ID'. The 'Notes' tab contains the following fields: 'Notes:' (text box) and 'At power-on' (checkbox). The 'At power-on' checkbox is currently checked.

Figure 3-19. Owner Properties Window - Notes Tab

7. To setup identification for remote networks, select the *Network ID* tab. Enter the user name, password, and domain name you use to log on to the remote network.

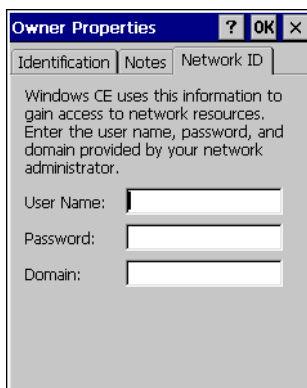


Figure 3-20. Owner Properties Window - Network Tab

After the information is entered and the *Display owner identification/notes* check boxes are selected, the *Welcome* window appears whenever the terminal is powered on.

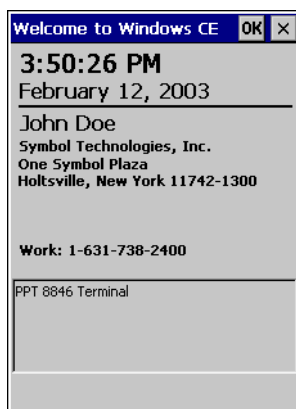
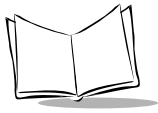


Figure 3-21. Welcome Window



Password

Change the owner's password and set security options.

Caution

If you forget your password, or if your terminal has become corrupted and resetting doesn't work, you must perform a hard reset. Performing a hard reset erases all files and data that you have created, and programs you have installed.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Password* icon.

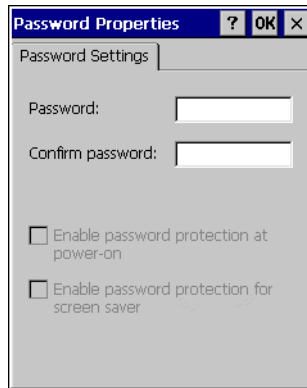


Figure 3-22. Password Properties Window

3. In the *Password* box, enter the password.
4. In the *Confirm password* box, enter the password again.
5. To require the password on startup, select *Enable password protection at power-on* check box.
6. To require the password to unlock the screen saver, select *Enable password protection for screen saver* check box.
7. Tap **OK** to apply the settings.

PC Connection

The *PC Connection Properties* window allows you to set the baud rate that the terminal will communicate with the host computer.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *PC Connection* icon.

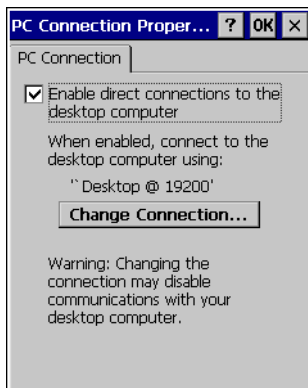


Figure 3-23. PC Connection Properties Window

3. Select the *Enable direct connections to the desktop computer* checkbox to allow for direct connections.
4. Tap the **Change Connection** button to change the baud rate.

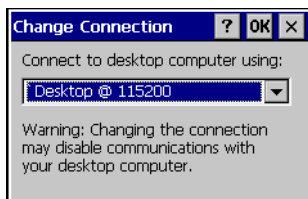
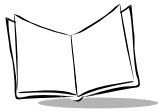


Figure 3-24. Change Connection Window

5. From the drop-down list, select the baud rate to connect to the desktop.
6. Tap **OK**.
7. In the *PC Connection Properties* window tap **OK** to apply the changes.



Power

The *Power Properties* window allows you to view the status of the main and backup batteries and set power management options.

Checking Battery Power Status

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Power* icon.
3. Select the *Battery* tab.

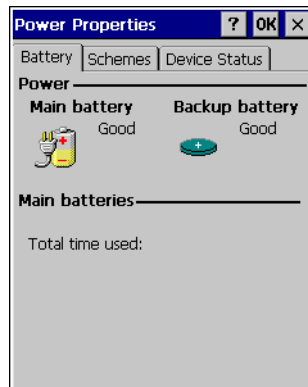


Figure 3-25. Power Properties - Battery Tab

The *Battery* tab provides general information on battery conditions. The amount of useful operating time remaining varies depending on battery type and how you use the terminal.

Optimizing Battery Life

You want your batteries to last as long as possible, especially when you're on the road. Under normal conditions, you can get many hours of use from a single charge. Here are a few tips to help you get the most of the battery.

- Use external power whenever possible. Use the AC adapter whenever possible, especially when:
 - Using the backlight feature.
 - Connecting to a desktop computer.
 - Using attachments.

- Set the terminal to turn off when idle. While on battery power, the terminal automatically turns off, or suspends operation, if you haven't touched the keyboard or used the stylus for three minutes. Maximize battery life by shortening this time.
- Turn off sounds you don't need. By default, the terminal produces sounds in response to a number of events, such as warnings, appointments, and hardware-button presses. To optimize battery life, turn off any sounds you don't need. See *Volume & Sounds* on page 3-52 for instructions.

Note: When batteries are low, a battery icon appears in the taskbar. See *Taskbar* on page 2-9 for more information.

Setting Up Power Schemes

1. Select the *Schemes* tab.

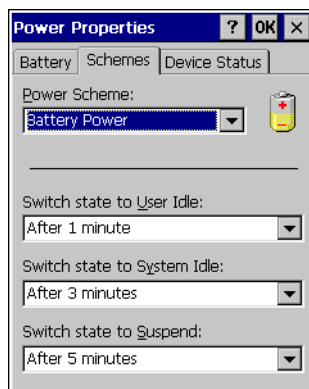
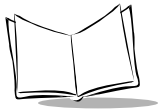


Figure 3-26. Power Properties - Schemes Tab

2. Select the desired options for entering reduced power states.

The time choices represent the amount of time that must pass before the terminal switches to the next power conservation state. For example, if "Switch state to System Idle:" is set to "After 5 minutes," then the system transitions from the User Idle state to the System Idle state after five minutes of inactivity.

Even if a time of "Never" is selected, the system may still enter a lower power conservation state if circumstances warrant. For instance, if "Switch state to Suspend:" is set to "Never," the battery reaching a critical level might still cause the system to suspend.



Note: Shorter times help conserve battery power.

Checking the Power Levels

1. Select the *Device Status* tab.

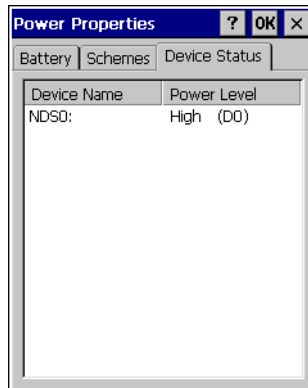


Figure 3-27. Power Properties - Device Status Tab

All components that have active power management enabled appear in the left column with their current power level in the right column. The power level ranges from “High (D0),” which means the terminal is at the highest power level to “Off (D4),” which means the terminal is at the lowest power level.

Regional Settings

With Regional Settings, you can change the way the terminal displays dates, times, currency amounts, large numbers, and numbers with decimal fractions. You can also choose the metric or U.S. system of measurement.

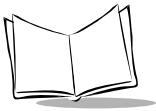
You can also choose from a large number of input locales. When you switch to another input locale, some programs offer special features, such as font characters or spell checkers designed for different languages.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Regional Settings* icon.



Figure 3-28. Regional Settings Properties - Region Tab

3. From the *Your locale:* drop-down list, select the country in which you are currently located.



4. Select the *Number* tab.

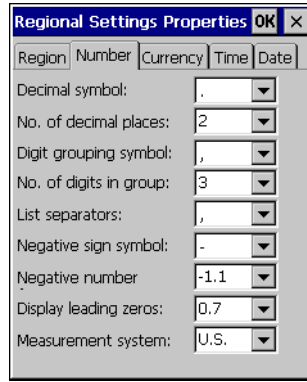


Figure 3-29. Regional Settings Properties - Number Tab

5. Select desired options. The characteristics available are determined by the region selected on the *Region* tab.
6. Select the *Currency* tab.

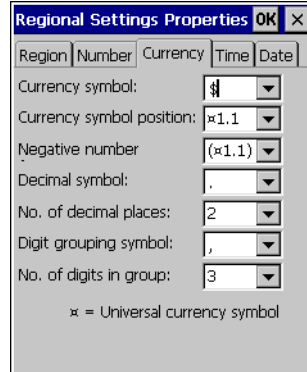


Figure 3-30. Regional Settings Properties - Currency Tab

7. Select desired options. The characteristics available are determined by the region selected on the *Regional* tab.

8. Select the *Time* tab.

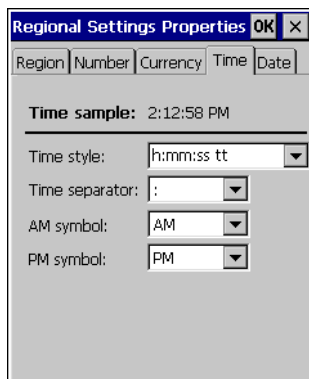


Figure 3-31. Regional Settings Properties - Time Tab

9. Select desired options. The characteristics available are determined by the region selected on the *Region* tab.
10. Select the *Date* tab.



Figure 3-32. Regional Settings Properties Window - Date Tab

11. Select desired options. The characteristics available are determined by the region selected on the *Region* tab.



Remove Programs

To remove programs that were loaded onto the terminal:

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Remove Programs* icon.
3. From the programs list, select the program you want to remove.

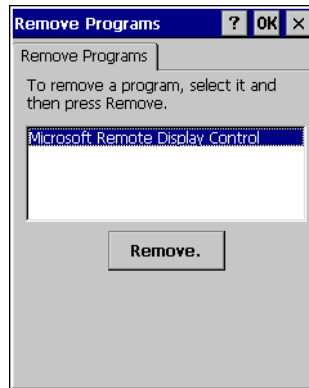


Figure 3-33. Remove Programs Tab

4. Tap **Remove**.

Note: *You can only remove programs that you have installed in RAM.*

Storage Manager

The *Storage Properties* window allows you to manage your storage media and disk partitions.

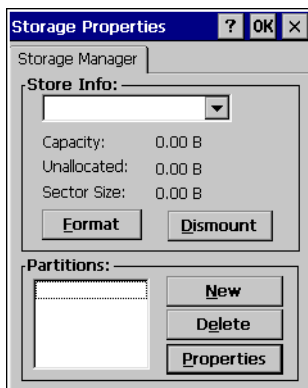


Figure 3-34. Storage Properties Window

Managing Storage Devices

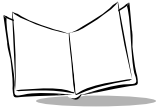
Available storage devices are listed by device name in the *Store Info:* drop-down list. To view information about the disk or perform store operations, select a device from the list.

- To unmount all partitions on the selected storage device, tap **Dismount**.
- To format the partition table, tap **Format**. The partition table cannot be formatted if any partitions on the storage device are mounted.

Managing Disk Partitions

Available partitions on the selected storage device are listed in the *Partitions:* list box.

- To create a new partition on the storage device, tap **New**.
- To delete a partition from the storage device, select the partition to delete and tap **Delete**. Mounted partitions cannot be deleted.
- To view partition information or perform advanced partition functions, such as formatting, select the partition to view from the list and tap **Properties**. See *Advanced Partition Options* on page 3-40.



Creating A New Partition

To create a new partition, select a storage device from the *Store info:* list and tap **New**.

1. Type the name of the new partition.
2. Type the size (in sectors) for the new partition, or check the *Use All Available Disk Space* box.
3. Tap **OK** to create the partition, or tap **X** to cancel.

Advanced Partition Options

To view advanced partition options, select a partition from the list and tap **Properties**.

- To mount an unmounted partition, tap **Mount**.
- To dismount a mounted partition, tap **Dismount**.
- To format a partition, tap **Format**.
- To scan and repair a partition, tap **Scan**.
- To defragment a partition, tap **Defrag**.

Note: Depending on a partition's file system, the **Format**, **Scan**, and **Defrag** options may not be available. The behavior of these features will vary depending on the implementation of the file system's utility library.

Stylus

Use the *Stylus Properties* window to calibrate the touch screen and adjust double-tap timing.

Adjusting the Stylus Double-tap Rate

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Stylus* icon.

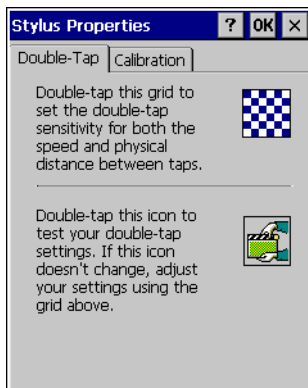
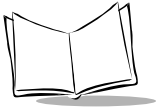


Figure 3-35. Stylus Properties - Double-Tap Tab

3. In the *Double-Tap* tab, double-tap the checkerboard grid at a comfortable speed.
4. Double-tap the clapboard to test your settings.
5. Tap **OK** to apply changes.

Recalibrating the Touch Screen

1. Select *Start - Settings - Control Panel*.



2. Double-tap the *Stylus* icon.



Figure 3-36. Stylus Properties - Calibration Tab

3. Select the *Calibration* tab.
4. In the *Calibration* tab, tap **Recalibrate**.
5. Tap a target with the stylus and following the on-screen messages.
6. Tap **OK**.

Symbol Settings

Waking the Terminal

The terminal can be configured to wakeup by pressing the trigger key.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Symbol Settings* icon.

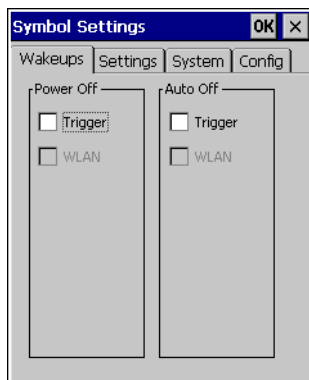


Figure 3-37. Symbol Settings - Wakeups Tab

You can set the terminal to go into sleep mode with the power button or set it to go into sleep mode automatically by an automatic power-off function. Refer to for wakeup condition settings based on the selected sleep mode operation. Settings can be made for the case where it goes into sleep with the power button and the case where it goes into sleep automatically by automatic power-off function. [Table 3-7](#) lists the wakeup conditions settings.

Note: *All wakeup condition settings are not retained after a hard reset. After a hard reset, wakeup only with the Power button. However, all settings are maintained after a soft reset.*

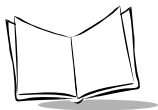


Table 3-7. Wakeup Conditions

Status	Description	Action	Conditions for wakeup
Power Off	When the terminal goes into sleep mode by pressing the Power button, these actions wake the terminal up.	Trigger	Trigger button is pressed.
		WLAN	Wireless LAN access the terminal.
Auto Off	When the terminal goes into sleep mode by an automatic power-off function, these actions wake the terminal up.	Trigger	Trigger button is pressed.
		WLAN	Wireless LAN access the terminal.

Settings Tab

Use the *Settings* tab to control power to the external connector.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Symbol Settings* icon.

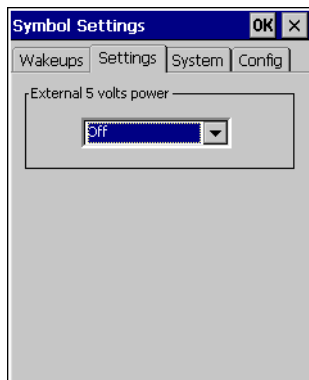


Figure 3-38. Symbol Settings - Settings Tab

3. In the *Settings* tab select the appropriate options to control power to the external connector.

The following selections can be made from the *External 5 volts power* drop-down list:

Table 3-8. External 5 Volts Power Settings

Setting	Description
Off	5V is not supplied to the serial port.
Active On	The terminal outputs 5V while the serial port is open (by an application).
Always On	5V is always available at the serial port
The default setting is Off after a hard reset. The selected setting is maintained after soft reset.	

System Tab

The *System* tab displays terminal system data.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Symbol Settings* icon.
3. Select the *System* tab.

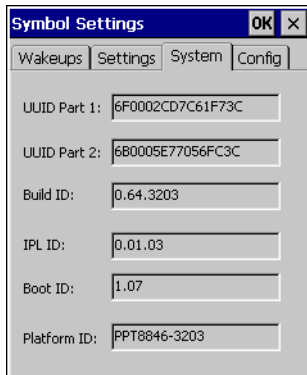
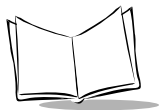


Figure 3-39. Symbol Setting - System Tab



In the *System* tab you can view system data. Refer to [Table 3-9](#) for field descriptions.

Table 3-9. System Tab Data

Item	Description	Format
UUID	Inherent value of built-in flash ROM. Part 1: Flash ROM of data bus high order word. Part 2: Flash ROM of data bus low order word.	XXXXXXXXXXXXXXXXXX (where X is an alphanumeric character)
Build ID	Control version of when OS image is built.	X.XX.XXXXXX (where X is an alphanumeric character)
IPL ID	Version of IPL.	X.XX (where X is an alphanumeric character)
Boot ID	Version of Boot.	X.XX (where X is an alphanumeric character)
Platform ID	Version of Platform.	PPT 88XX-XXX (where X is an alphanumeric character)

Config Tab

The *Config* tab displays terminal configuration data.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Symbol Settings* icon.

3. Select the *Config* tab.

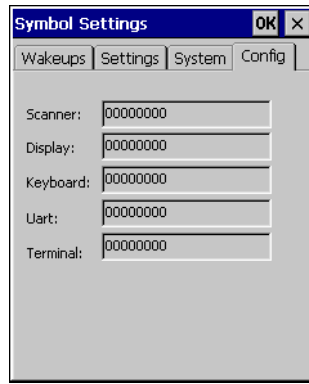
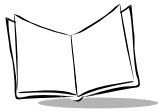


Figure 3-40. Symbol Settings - Config Tab



System

Use the *System Properties* window to view general system properties, change memory settings, input device name and view copyright information.

General Tab

The *General* tab view displays general system settings:

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *System* icon.
3. Select the *General* tab to view basic system and computer properties.



Figure 3-41. System Properties - General Tab

Memory Tab

The *Memory* tab view allows you to adjust RAM allocation:

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *System* icon.

3. Select the *Memory* tab.

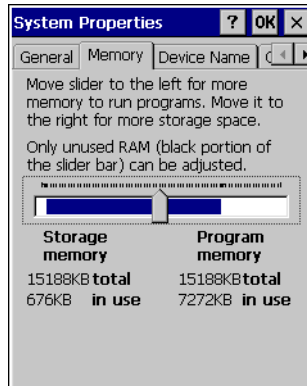


Figure 3-42. System - Memory Tab

4. To adjust RAM allocation move the slider to allocate more memory for programs or storage. If you don't have enough space for a file, increase the amount of storage memory. If your terminal is running slowly, try increasing the amount of program memory.

Note: *Resetting your terminal can make additional storage or program memory available. If you continue to experience memory problems, reset your terminal.*

The General tab provides general information about the hardware and software configurations on your device.

A maximum of 16 MB of RAM can be allocated to files.

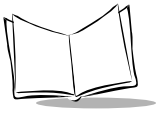
Programs Located in ROM and RAM

Programs supplied with the terminal are located in ROM and will remain after a hard reset. Programs you install are located in RAM and need to be reinstalled after a hard reset. If you have trouble reinstalling programs, adjust RAM allocation.

Device Name Tab

The *Device Name* tab allows you to customize the name and description of your device:

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *System* icon.



3. Select the *Device Name* tab.

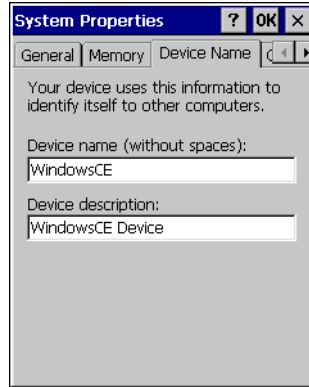


Figure 3-43. System Properties - Device Name Tab

4. Enter a device name for the terminal in the *Device name (without spaces):* field. Ensure that you use no spaces.
5. Enter a description for the terminal in the *Device description:* field.

Copyrights Tab

The *Copyrights* tab allows you to view any relevant copyright information.

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *System* icon.

3. Tap the *Copyrights* tab.

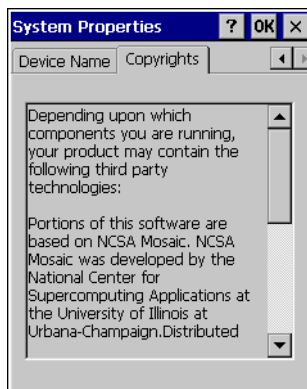


Figure 3-44. System Properties - Copyrights Tab



Volume & Sounds

Use the *Volume & Sounds Properties* window to set event sounds and volume options.

Adjusting Volume and Sounds

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Volume & Sounds* icon.

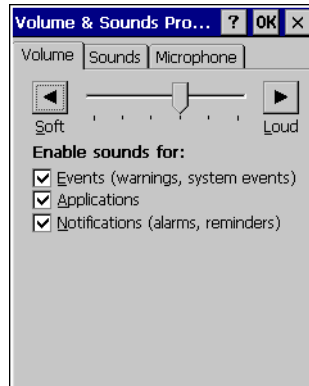


Figure 3-45. Volume & Sounds Properties Window - Volume Tab

3. Select the *Volume* tab.
4. Use the slide bar to change the volume.
5. Select the desired enable sound options.

Note: *Turning off sounds saves power and prolongs battery life.*

Changing Event Sounds

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Volume & Sounds* icon.

3. Select the *Sound* tab.

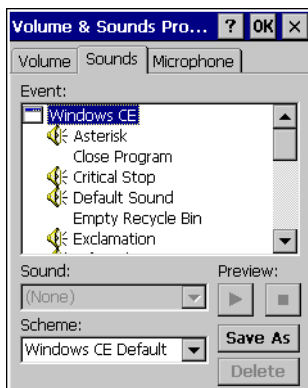


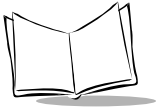
Figure 3-46. Volume & Sounds Properties - Sounds Tab

4. From the *Event*: drop-down list, select an event.
5. From the *Sound*: drop-down list, select a sound.
To remove a sound from the selected event, select *(None)*.
6. To save the changes to a different scheme, tap **Save As**, and then name the sound scheme.
7. To delete a sound scheme, select the scheme in the *Scheme*: drop-down list and tap **Delete**.

Note: To quickly turn off all event sounds, select *No sounds from the Scheme: list*.

Adjusting Microphone Gain

1. Select *Start - Settings - Control Panel*.
2. Double-tap the *Volume & Sounds* icon.



3. Select the *Microphone* tab.

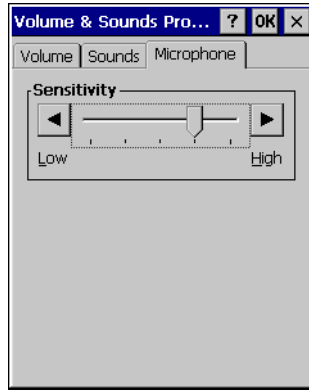
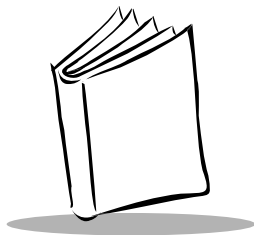


Figure 3-47. Volume & Sound Properties - Microphone Tab

4. Move the slider to adjust the microphone gain. [Table 3-10](#) list the sensitivity settings for a microphone.

Table 3-10. Microphone Sensitivity Settings

Sensitivity	Comment
Very low (furthest left)	Sensitivity is low.
Low	Sensitivity is slightly low.
Med	Sensitivity is medium. Default after hard reset.
High	Sensitivity is slightly high.
Very high (furthest right)	Sensitivity is high.

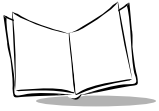


Chapter 4

Communications

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Introduction

Your PPT 8800 Series terminal is capable of communicating with a number of hosts, including development PCs, serial devices, printers, etc. The available accessories serve as essential data communication devices, enabling you to synchronize the information on your terminal with the information on your host device using ActiveSync. With the appropriate accessory and software, the terminal can establish a number of connection types, such as a serial connection and a modem connection.

This chapter provides information on installing the appropriate communication software and setting up the appropriate accessory to enable communication between the terminal and the host device.

Installing Communication Software

To successfully communicate with the various host devices the following must be installed on your host computer:

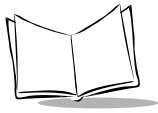
- Microsoft ActiveSync
- eConnect.

Installing ActiveSync

Using ActiveSync, you can synchronize the information on your terminal with the information on your host computer. Changes you make on your terminal or host computer appear in both places after you synchronize.

With ActiveSync software you can:

- Work with terminal-compatible host applications on your host computer. ActiveSync replicates data from your terminal so you can view, enter and modify any data stored on your terminal with the host application.
- Synchronize files between your terminal and host computer. Your files are automatically converted to the correct format.
- Back up the data stored on your terminal. Synchronization is a one-step procedure that ensures your data is always safe and up-to-date.
- Copy (rather than synchronize) files between your terminal and host computer.
- Control when synchronization occurs by selecting a synchronization mode, e.g., you may synchronize continually while the terminal is connected to the host computer, or only when you select the synchronize command.



- Select the types of information to synchronize, and control how much data is synchronized.

To install ActiveSync on your host computer:

1. Download version 3.7 or higher of the software from <http://www.microsoft.com>. Refer to the installation and RAS instructions included with the ActiveSync software you download.
2. Set up a partnership between the terminal and host computer through the ActiveSync connection using a serial connection or Universal Cable Cup/USB cable.

Note: *Prior to synchronizing a terminal using the Four-Slot Ethernet cradle, a Partnership must be set up between the terminal and the host computer using either a serial or USB connection.*

Setting up a Partnership

After installation is complete, the ActiveSync Setup Wizard helps you connect your terminal to your host computer, set up a partnership so you can synchronize information between your terminal and host computer, and customize synchronization settings.

1. If the *Get Connected* window does not appear, select *Start - Programs - Microsoft ActiveSync*.



Figure 4-1. Get Connected Window

2. Connect the terminal to the host computer.
3. On the host computer, select **Next** in the *Getting Connected* window.



4. The host computer and the terminal will attempt to synchronize. The *New Partnership* window appears.



Figure 4-2. New Partnership Window

5. Click the **Yes** radio button and then select **Next**. The *New Partnership/Select Number of Partnerships* window appears.

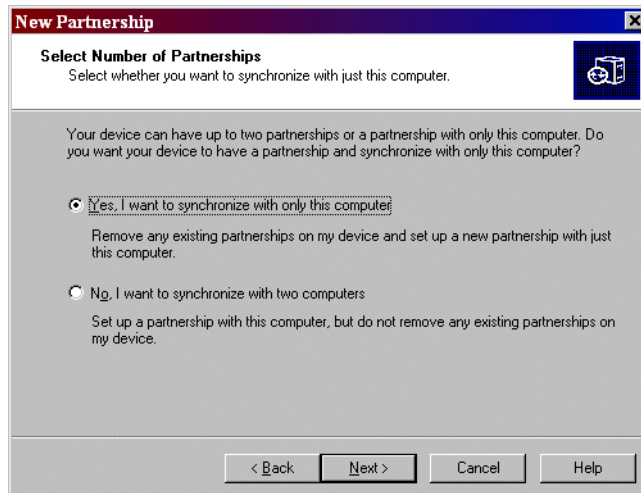


Figure 4-3. Select Number of Partnerships

6. Select **Next**. The *New Partnership/Select Synchronization Settings* window appears.



Figure 4-4. Select Synchronization Settings Window

7. To synchronize file, click on *Files* check box. The *File Synchronization* window appears.

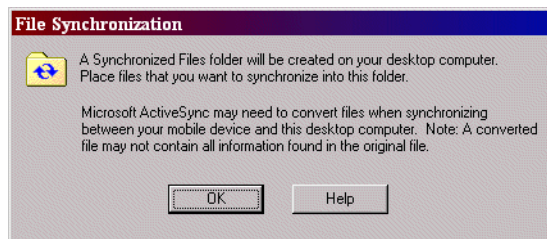
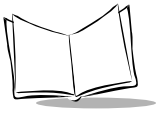


Figure 4-5. File Synchronization Folder Confirmation

8. Select **OK** to display the *Setup Complete* window.



9. Select **Next**.

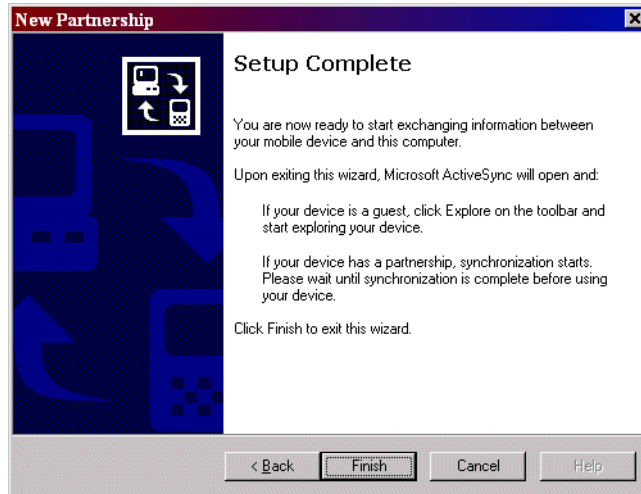


Figure 4-6. Setup Complete Window

10. Select **Finish**.



Figure 4-7. ActiveSync Connected Window

During the first synchronization, information stored on your host computer is copied to your terminal. When the copy is complete and all data is synchronized, you can disconnect your terminal from your host computer.

Note: *You must perform your first ActiveSync operation with a local, direct connection.*

To retain partnerships after a hard reset, capture partnership registry information in a .reg file and save it in the Flash File System. See the Windows CE Help File for Symbol Terminals for details.

For more information about using ActiveSync, start ActiveSync on your host computer, then see ActiveSync Help.

Installing eConnect

eConnect is a control panel applet that automates the launch of a modem connection and applications, such as ActiveSync or Internet Explorer.

Note: *eConnect is needed when establishing a connection using the Four-Slot Serial or Four-Slot Ethernet cradles.*

To install eConnect, download it (for Windows CE .NET) from <http://devzone.symbol.com>. Follow the installation instructions included to install the software on your terminal.

Communication Setup

The terminal can communicate with the host computer using the following accessories:

- Serial Charging Cable (through a serial connection)
- Single-Slot Serial Cradle (through a serial connection)
- Four-Slot Serial Cradle (through a serial connection)
- Four-Slot Ethernet Cradle (through an Ethernet connection).

For each accessory, you need to follow instructions on configuring your host computer, setting up the connection between the terminal and the host computer, and configuring the terminal.

Using the Serial Charging Cable

1. Ensure that ActiveSync was installed on the host computer and a partnership was created. See *Installing ActiveSync* on page 4-3 and *Setting up a Partnership* on page 4-4.



2. Start ActiveSync if it is not running on the host computer. To start, select *Start - Programs - Microsoft ActiveSync*.



Figure 4-8. ActiveSync - Not Connected

3. In the *ActiveSync* window, select *File - Connection Settings* and ensure the selections shown in [Figure 4-9](#) are made. (Select the appropriate COM port for your host computer.)

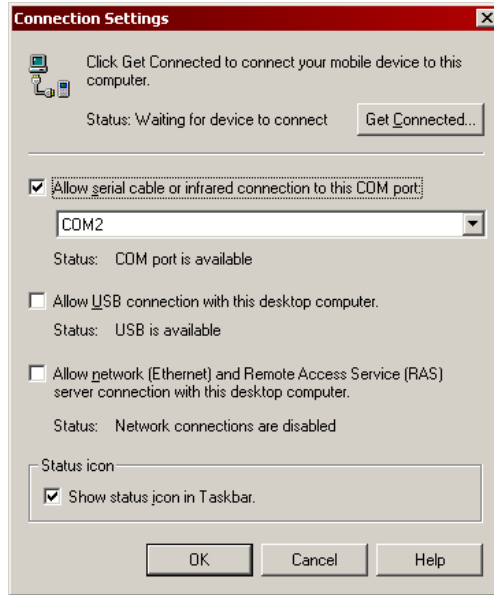


Figure 4-9. Connection Settings

4. Select **OK** to save any changes made.
5. On the terminal, select *Start - Settings - Control Panel*. Double-tap the *PC Connection* icon. Tap the **Change Connection** button.

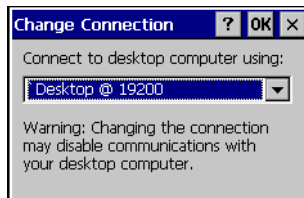


Figure 4-10. Change Connection Window

6. From the *Connect to desktop computer using:* list, ensure 'Desktop @ 115200' is selected.
7. Tap **OK** on the *Change Connection* window.



8. Tap **OK**.

Note: Every terminal should have a unique device name. Never try to synchronize more than one terminal to the same name. See Device Name Tab on page 3-49 for instructions on changing the device name.

9. Connect the Serial Charging Cable to your terminal and host computer as shown in Figure 4-11.

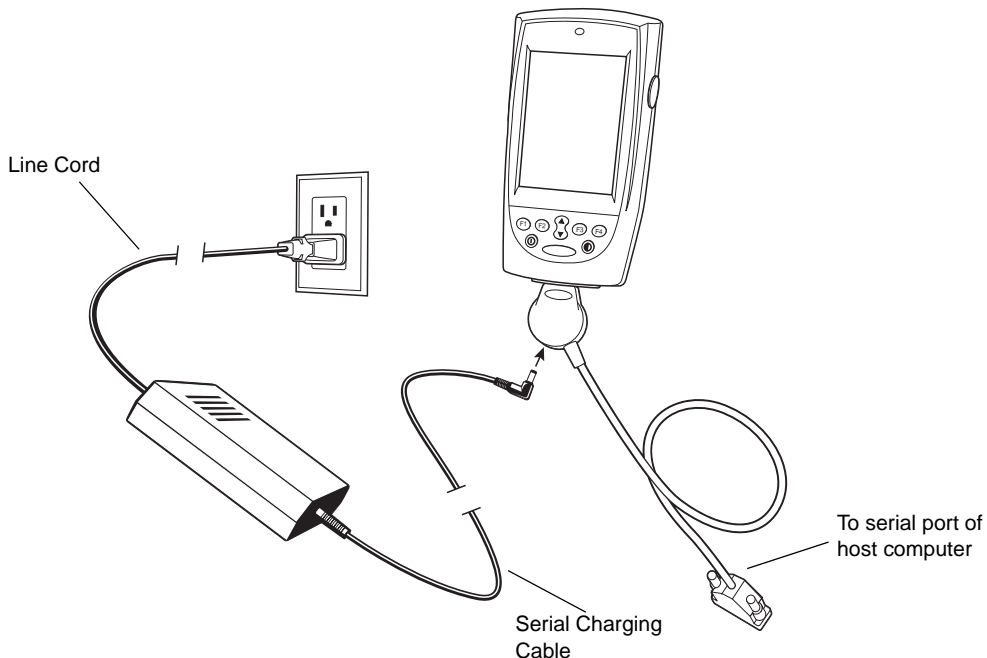


Figure 4-11. Connecting the Serial Charging Cable

Note: The serial charging cable requires a dedicated port. It cannot share a port with an internal modem or other device. If you are unsure about the location of the serial port on your computer, refer to the user's manual supplied with the computer.

10. Upon connection, synchronization occurs automatically.

Using the Single-Slot Serial Cradle

Note: The following procedures pertain to both the CRD8800-1000S and CRD8800B-1000S Single-Slot Serial cradles.

1. Ensure that ActiveSync was installed on the host computer and a partnership was created. See *Installing ActiveSync* on page 4-3 and *Setting up a Partnership* on page 4-4.
2. Start ActiveSync if it is not running on the host computer. To start, select *Start - Programs - Microsoft ActiveSync*.

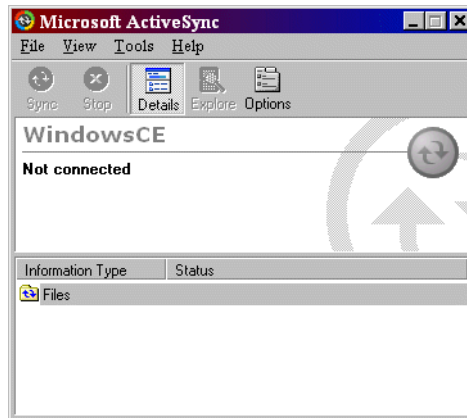


Figure 4-12. ActiveSync - Not Connected



3. In the *ActiveSync* window, select *File - Connection Settings* and ensure the selections shown in [Figure 4-13](#) are made. (Select the appropriate COM port for your host computer.)

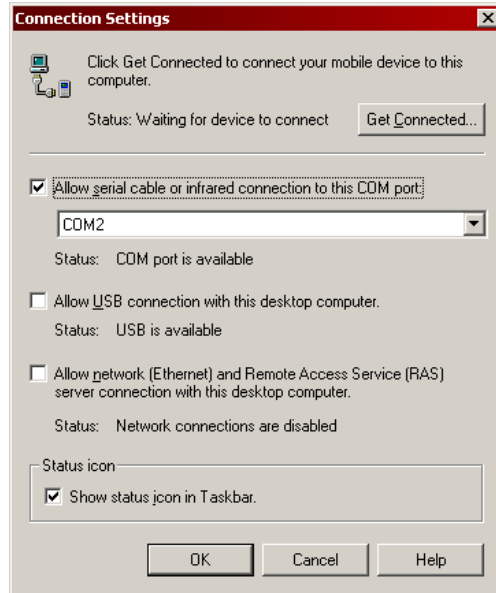


Figure 4-13. Connection Settings

4. Select **OK** to save any changes made.
5. On the terminal, select *Start - Settings - Control Panel*. Double-tap the *PC Connection* icon. Tap the **Change Connection** button.

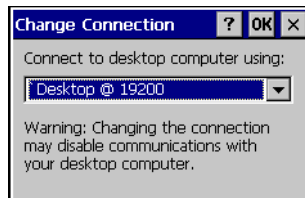


Figure 4-14. Change Connection Window

6. From the *Connect to desktop computer using:* list, ensure 'Desktop @ 115200' is selected.
7. Tap **OK** on the *Change Connection* window.

8. Tap **OK**.

Note: Every terminal should have a unique device name. Never try to synchronize more than one terminal to the same name. See *Device Name Tab* on page 3-49 for instructions on changing the device name.

9. Connect your CRD8800-1000S cradle to your host computer as shown in [Figure 4-15](#).

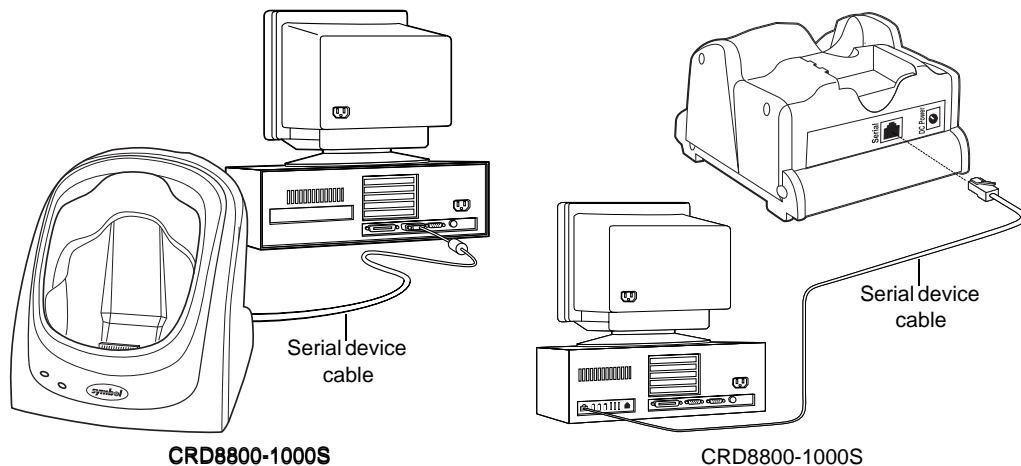
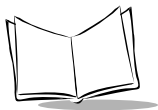


Figure 4-15. Connecting the Cradle to the Host

Note: The cradle requires a dedicated port. It cannot share a port with an internal modem or other device. If you are unsure about the location of the serial port on your host computer, refer to the user's manual supplied with the computer.



10. Turn on the terminal and slide it into the cradle.

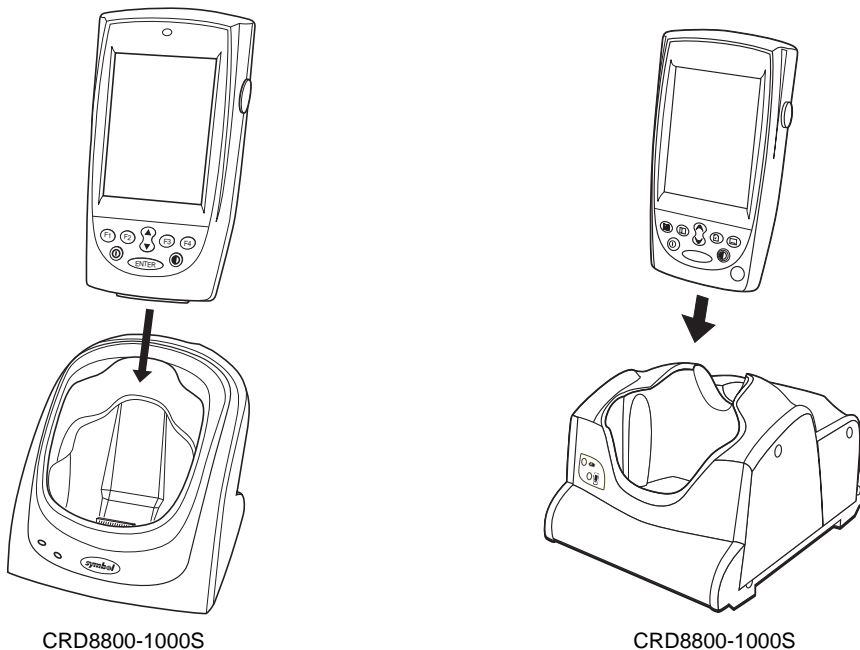


Figure 4-16. Inserting the Terminal in the Cradle

Note: *The serial charging cable requires a dedicated port. It cannot share a port with an internal modem or other device. If you are unsure about the location of the serial port on your computer, refer to the user's manual supplied with the computer.*

11. Upon connection, synchronization occurs automatically.

Using the Four-Slot Serial Cradle

1. Ensure that ActiveSync was installed on the host computer and a partnership was created. See *Installing ActiveSync* on page 4-3 and *Setting up a Partnership* on page 4-4.

2. Start ActiveSync if it is not running on the host computer. To start, select *Start - Programs - Microsoft ActiveSync*.

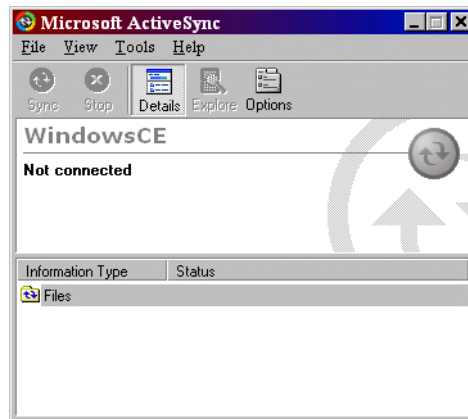


Figure 4-17. ActiveSync - Not Connected



3. In the *ActiveSync* window, select *File - Connection Settings* and ensure the selections shown in [Figure 4-18](#) are made. (Select the appropriate COM port for your host computer.)

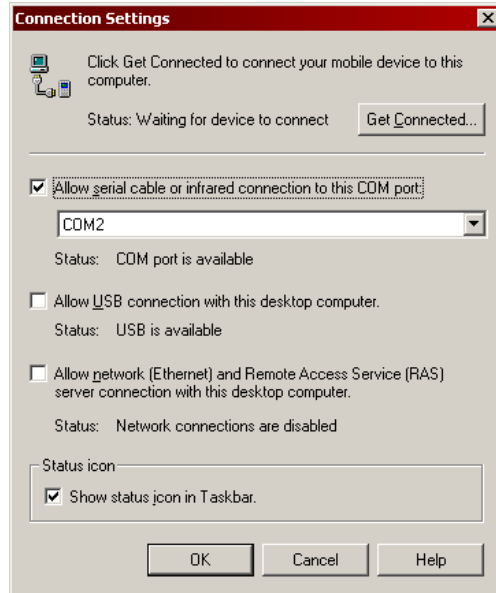


Figure 4-18. Connection Settings

4. Select **OK** to save any changes made.
5. On the terminal, select *Start - Settings - Control Panel*. Double-tap the *PC Connection* icon. Tap the **Change Connection** button.

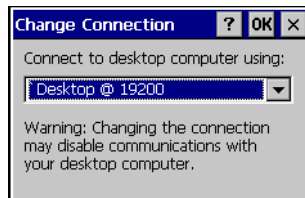


Figure 4-19. Change Connection Window

6. From the *Connect to desktop computer using:* list, ensure 'Desktop @ 115200' is selected.
7. Tap **OK** on the *Change Connection* window.

8. Tap **OK**.

Note: Every terminal should have a unique device name. Never try to synchronize more than one terminal to the same name. See Device Name Tab on page 3-49 for instructions on changing the device name.

9. Connect your CRD8800-4000S cradle to your host computer as shown in [Figure 4-15](#).

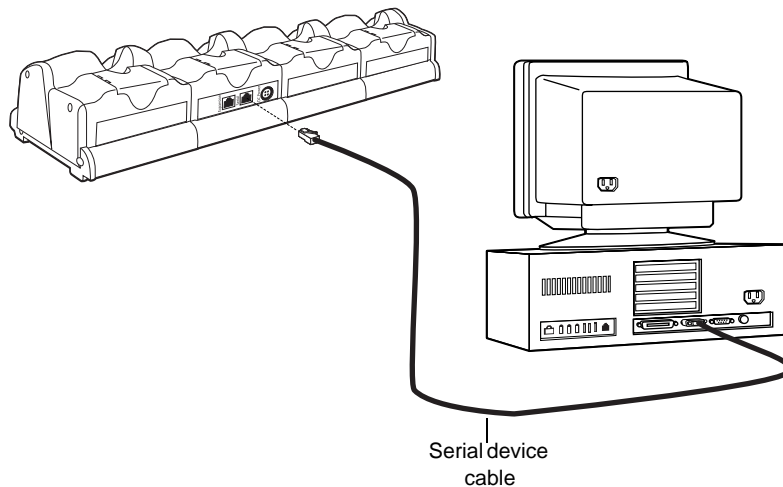
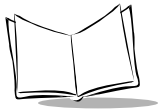


Figure 4-20. Connecting the Cradle to the Host

Note: The cradle requires a dedicated port. It cannot share a port with an internal modem or other device. If you are unsure about the location of the serial port on your host computer, refer to the user's manual supplied with the computer.



10. Turn on the terminal and slide it into the cradle.

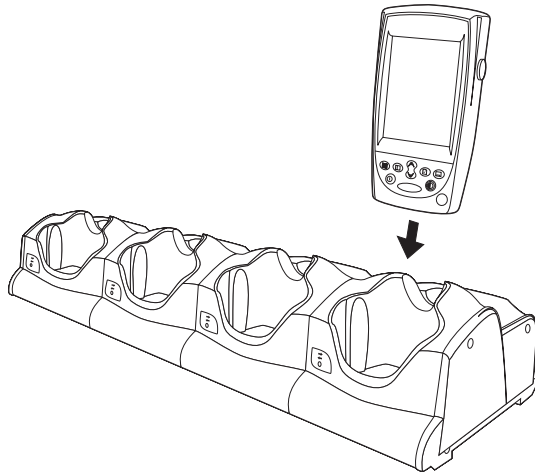


Figure 4-21. Inserting the Terminal in the Four-Slot Serial Cradle

Note: *The serial charging cable requires a dedicated port. It cannot share a port with an internal modem or other device. If you are unsure about the location of the serial port on your computer, refer to the user's manual supplied with the computer.*

11. Upon connection, synchronization occurs automatically.

Using a Four-Slot Ethernet Cradle

The CRD8800-4000E Four-Slot Ethernet Cradle allows communication between terminals and their associated host computers connected to an Ethernet network using ActiveSync and eConnect. The CRD8800-4000E must be connected to an Ethernet network which is connected to the same network as the host computers, or an Ethernet network connected to the larger Internet via an Internet gateway. The cradle uses one of two configurations to accomplish this: *DHCP mode* or *Static mode*.

ActiveSync only allows one terminal to connect to a host at a time. eConnect is a required control panel applet that is installed on the terminal and allows ActiveSync, or any custom synchronization application, to be launched when the terminal is inserted into the cradle. eConnect can also be set up to start a TCP/IP connection with the cradle, allowing any IP-based application to communicate through the cradle. When the terminals are inserted in the cradle, the cradle appears to be a direct-connect PPP service.

The cradle must be properly configured for use with the terminal. The configuration steps include:

- Connecting the cradle to a network
- Configuring the cradle
- Configuring the host computer
- Configuring the terminal.

DHCP Mode

1 DHCP Address Mode

When using DHCP mode, the cradle acquires its IP address dynamically from the DHCP server. There must be a DHCP server or a DHCP relay agent on the same subnet as the CRD8800-4000E with IP addresses, a gateway IP address, at least one DNS address, at least one WINS server address, and a subnet mask for the unit to be automatically configured. The cradle acquires one DHCP address from the DHCP server.

6 DHCP Address Mode

The 6 DHCP address mode is the cradle's default mode. When using this mode, the cradle acquires 6 IP addresses dynamically from the DHCP server: one for the cradle, one for each of the 4 slots, and one for the expansion slot.

In this mode, each slot has its own IP address and may be directly accessed by the network. On power-up, the 6 IP addresses are acquired. Periodically, the lease times are checked and renewed as required. If the renewal request is NAKed by the server, the cradle



enters *Panic* mode and re-boots. If the cradle receives no response from the server and is unable to re-bind, it enters *Panic* mode and re-boots.

Caution

In 6 DHCP address mode, the cradle must acquire 6 addresses from the DHCP server by requesting addresses with different requestor IDs. Some DHCP servers use the MAC address instead and with those cradles the cradle only receives one address and will not operate. This situation has occurred on some Novell servers. To remedy the situation, use static mode.

Static Mode

If there is no DHCP server on the network, the cradle must be manually configured with IP addresses and other network-related information.

Connecting the Cradle to a Network

To set up network communications:

1. Ensure there is a DHCP server accessible to the cradle on the subnet.
2. Connect one end of a standard 10 Base-T network cable to the connector labeled *Ethernet* on the back of the cradle. Connect the other end of the cable to a subnet hub.

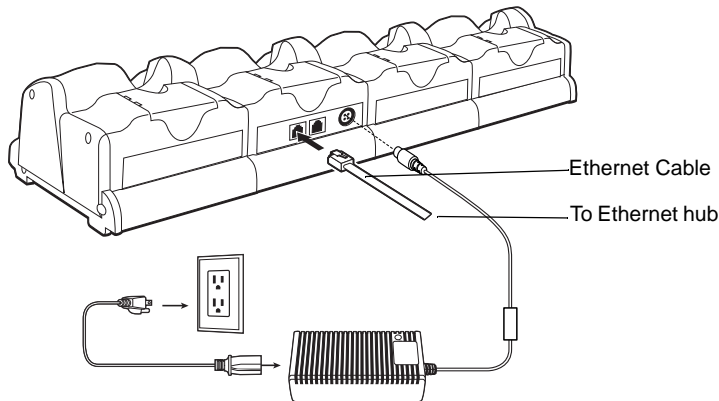


Figure 4-22. Connecting the Four-Slot Ethernet Cradle

3. Configure the cradle. See *Configuring the Cradle for DHCP Address Mode* on page 4-23 or *Configuring the Cradle for Static Mode* on page 4-25.
4. Power up the cradle; the cradle performs a power-up sequence, then attempts to collect its network parameters from the DHCP server. While collecting network parameters, all LEDs flash green. Once configuration completes, all LEDs shut off.

If configuration of the cradle from the DHCP server fails, all LEDs flash red. The cradle retries the DHCP request every 10 minutes.

Configuring the Cradle for DHCP Address Mode

1. Start a terminal emulation session for the cradle:
 - a. Connect the modular end of cable (p/n 170013-000) to the Expansion port of the cradle. Connect the DB-9 end of the cable using a null modem adapter to the COM port on the host computer.

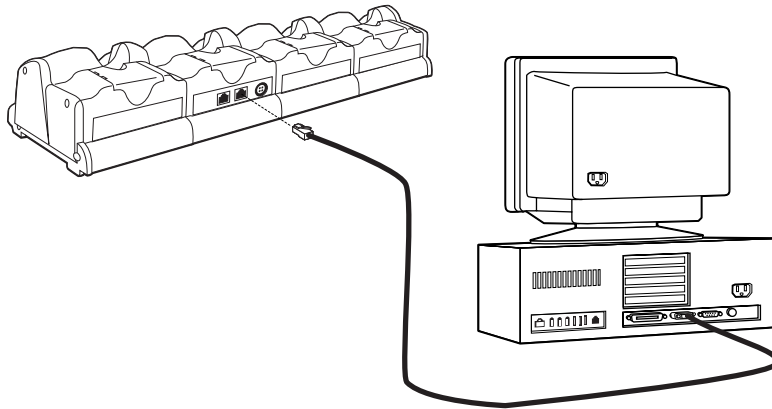
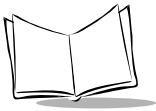


Figure 4-23. Connecting the Four-Slot Ethernet Cradle to Host Computer

- b. Start a terminal emulation session on the host computer. Use standard terminal emulator software, such as Pro-Comm™ or Hyperterminal™. Use the following terminal emulation settings: 115200 bps, 8N1, XON/XOFF flow control, ASCII file transfer protocol.
 - c. Power on the cradle. Before the power up LED sequence begins, on the host computer press “a” from the terminal program to load the Cradle Utilities



configuration interface. The *Cradle Utilities Version* screen appears on the host computer:

```
Cradle Utilities Version x.xx
Firmware Datecode: xxxxxxxx
1: Public network settings
2: Advanced settings
3: PPP settings
4: Private network settings
5: Firmware Download
Select a submenu OR:
Q: Discard changes and restart
F: Save changes and restart
```

2. Press 1 to display the *Public network settings* menu:

```
Public network settings
1: Static Mode: 1
2: NAPT Mode: 1
The following settings are only used when Static
mode is 1
3: Cradle IP Address: 0.0.0.0
4: Router (Gateway) IP Address: 0.0.0.0
5: 1st DNS IP Address: 0.0.0.0
6: 2nd DNS IP Address: 0.0.0.0
7: 1st WINS IP Address: 0.0.0.0
8: 2nd WINS IP Address: 0.0.0.0
9: Subnet Mask: 0.0.0.0
The following settings are only used when
NAPT mode is 0 and Static mode is 1
A: Terminal 1 IP Address: 0.0.0.0
B: Terminal 2 IP Address: 0.0.0.0
C: Terminal 3 IP Address: 0.0.0.0
D: Terminal 4 IP Address: 0.0.0.0
E: Expansion Port IP Address: 0.0.0.0
```

3. From the *Public network settings* menu:
 - a. Press 1 to set the Static Mode. The Static Mode selection appears:

```
Enter '1' to enable Static mode
Enter '0' to disable Static mode
Enter new value:
```


- b. Press 1 to enable or 0 to disable Static mode. The *Public network settings* menu re-appears with the new Static Mode value.
- c. Press 2 to set the NAPT Mode. The NAPT Mode selection appears:

Enter '1' to enable NAPT mode
 Enter '0' to disable NAPT mode
 Enter new value:

- d. Press 1 to enable NAPT or 0 to disable NAPT mode. The *Public network settings* menu re-appears with the new NAPT Mode value.
- e. Set the DHCP Address Mode as follows:

For the 6 DHCP Address Mode: Set NAPT Mode to 0 (see step c).

When Static Mode and NAPT Mode are both set to 0, the cradle acquires 6 IP addresses from the DHCP server.

For the 1 DHCP Address NAPT Mode: Set NAPT Mode to 1 (see step c).

When NAPT Mode is set to 1, the cradle uses 5 private NAPT addresses (192.168.1.1 through 192.168.1.5 by default; the network does not see these addresses).

- f. Press Q to return to the main *Cradle Utilities* menu.
- g. Press F to write these values to flash memory and reset the cradle.

Configuring the Cradle for Static Mode

1. Start a cradle terminal emulation session:
 - a. Connect the modular end of the cable (p/n 170013-000) and a null modem adapter between the expansion port of the cradle and a COM port on a host computer. See [Figure 4-23 on page 4-23](#).
 - b. Start a terminal emulation session on the host computer. Use standard terminal emulator software, such as Pro-Comm™ or Hyperterminal™. Use the following terminal emulation settings: 115200 bps, 8N1, XON/XOFF flow control, ASCII file transfer protocol.
 - c. Power on the cradle. Before the power up LED sequence begins, on the host computer press “a” from the terminal program to load the Cradle Utilities



configuration interface. The *Cradle Utilities Version* screen appears on the host computer:

```
Cradle Utilities Version x.xx
Firmware Datecode: xxxxxxxx
1: Public network settings
2: Advanced settings
3: PPP settings
4: Private network settings
5: Firmware Download
Select a submenu OR:
Q: Discard changes and restart
F: Save changes and restart
```

2. Press 1 to display the *Public Network Settings* menu:

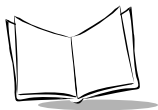
```
Public Network Settings
1: Static Mode: 0
2: NAPT Mode: 1
The following settings are only used when Static
mode is 1
3: Cradle IP Address: 0.0.0.0
4: Router (Gateway) IP Address: 0.0.0.0
5: 1st DNS IP Address: 0.0.0.0
6: 2nd DNS IP Address: 0.0.0.0
7: 1st WINS IP Address: 0.0.0.0
8: 2nd WINS IP Address: 0.0.0.0
9: Subnet Mask: 0.0.0.0
The following settings are only used when
NAPT mode is 0 and Static mode is 1
A: Terminal 1 IP Address: 0.0.0.0
B: Terminal 2 IP Address: 0.0.0.0
C: Terminal 3 IP Address: 0.0.0.0
D: Terminal 4 IP Address: 0.0.0.0
E: Expansion Port IP Address: 0.0.0.0
```

3. From the *Public network settings* menu:
 - a. Set Static Mode to 1 (see [page 25](#)).
 - b. Set NAPT Mode to 0 (see [page 25](#)).
 - c. Select 3 to access the *set cradle IP address* prompt.
Enter the new cradle IP Address at the prompt.
 - d. Select 4 to access the *set Router IP address* prompt.

- Enter the new internet gateway IP address at the prompt.
- e. Select 5 to access the *first set the DNS IP addresses* prompt.
Enter the first new DNS IP address at the prompt.
 - f. Select 6 to access the *second set the DNS IP addresses* prompt.
Enter the second new DNS IP address at the prompt.
 - g. Select 7 to access the *set the first WINS IP addresses* prompt. This is required for ActiveSync to function properly.
Enter the first new WINS IP address at the prompt.
 - h. Select 8 to access the *set the second WINS IP addresses* prompt.
Enter the second new WINS IP address at the prompt.
 - i. Select 9 to access the *set the correct subnet mask IP addresses* prompt.
Enter the new subnet mask IP address at the prompt.
 - j. Select A to access the *Terminal 1 IP addresses* prompt.
Enter the new Terminal 1, IP address at the prompt.
 - k. Select B to access the *Terminal 2 IP addresses* prompt.
Enter the new Terminal 2, IP address at the prompt.
 - l. Select C to access the *Terminal 3 IP addresses* prompt.
Enter the new Terminal 3, IP address at the prompt.
 - m. Select D to access the *Terminal 4 IP addresses* prompt.
Enter the new Terminal 4, IP address at the prompt.
- 4. Select Q to return to the main *Cradle Utilities* menu.
 - 5. Select F to reset cradle and write values to flash memory.

Network Address Translation (NAPT)

When Network Address Translation (NAPT) is enabled in both DHCP and Static mode, the cradle assigns private IP addresses to each terminal and performs Network Address Translation (NAPT) on all TCP/IP and UDP/IP packets as they transmit through the cradle between the outside network and the cradle's private network. The terminals are assigned private addresses specified in options A through E in the *Public network setting* menu.



The cradle modifies one IP address and port number pair inside a TCP/IP and UDP/IP packet header. Those packets going to the outside network have their source address translated to the IP address of the cradle and their source port changed to a unique port number associated with the cradle slot from which it came. Conversely, packets designated to the cradle's private network have their destination IP address and port number mapped to the equivalent private network IP address and port number. The differences in the port numbers distinguish between packets for different slots in the cradle. The benefit of both IP address and port translation is that multiple slots can simultaneously share the one network IP address of the cradle.

Accessing the outside network with the CRD8800-4000E is not the same as a direct connection to the outside network. When using NAT, many network services do not function at all. Since NAT modifies addresses in TCP/IP and UDP/IP headers, it is insufficient for network services that embed IP addresses inside packet data. Also, the CRD8800-4000E assumes that terminals sending data with one TCP or UDP source port expects to receive replies on the same port number, but some network services may reply with data over a range of ports. These network services are unusable with the CRD8800-4000E. Also, some services listen to incoming requests from the network. Since port numbers are usually fixed for a given service, no terminals can be set up as listeners.

Note: Turn off NAT mode before using ActiveSync.

Inter-Connecting Cradles

Up to four 4-slot serial cradles (CRD8800-4000S) may be inter-connected (daisy-chained) with the CRD8800-4000E. Use the Ethernet RJ-45/10 to RJ-45/10 inter-cradle cable (p/n 170142-001) to connect the CRD8800-4000S to the CRD8800-4000E and use the serial RJ-45/10 to RJ-45/10 inter-cradle cable (p/n 70349-001) to connect the CRD8800-4000S to another CRD8800-4000S.

WARNING

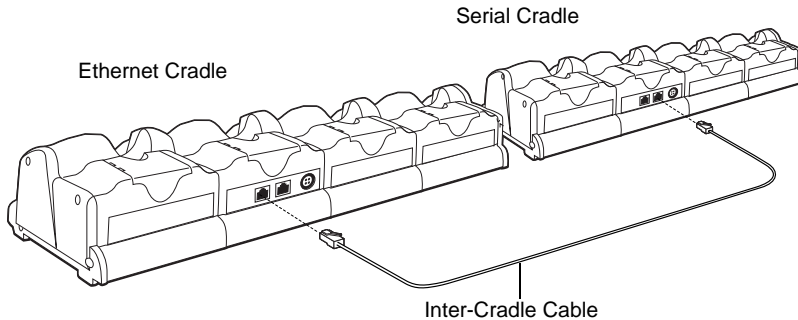
Each cradle must have its own power supply. Any other method of power hookup is unsafe.

To inter-connect cradles:

1. Connect the power supply to the second 4-slot cradle.

Note: *You must use a 8 VDC 5 A power supply on the serial cradle being connected to the ethernet cradle.*

2. Plug one end of the inter-cradle cable into the Expansion Connector modular jack labeled *EXPANSION* on the back of the first cradle.



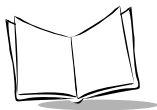
3. Plug the other end of the inter-cradle cable into the modular jack labeled *Serial* on the back of the second serial cradle.
4. Repeat these steps for any additional 4-slot serial cradles you want to connect.

Note: *The inter-connect interface does not support daisy-chaining to a Single-Slot Serial cradle.*

Configuration of the Host Computer

The host computer that you intend to synchronize with the terminal must be setup with the appropriate communication software and connection settings. This guide assumes that you are using Microsoft® ActiveSync software on both the terminal and the host computer. To configure the host computer:

1. Download and install ActiveSync. See *Installing ActiveSync* on page 4-3.
2. Configure the connection settings. The host computer must be configured for TCP/IP network communications.
 - a. Click on the ActiveSync icon from the system tray
 - b. Tap *File - Connection settings*.
 - c. In the *Connection settings* dialog box, select the *Allow Network (Ethernet) and Remote Access Service (RAS) server connection with this desktop computer* option.



You may have other options selected, for example, *Allow serial cable or infrared connection to this COM port*.

- d. Click **OK**.

Note: *Before communicating through an ethernet connection, you must create a partnership between your terminal and your host computer. See [Setting up a Partnership on page 4-4](#) for detailed instructions.*

Configuration of the Terminal

When you insert a terminal into the cradle, the cradle provides a direct-connect RAS service. You need to configure each terminal for use with the cradle, just as you would configure any remote client to connect to an Internet Service Provider (ISP). To configure the terminal install eConnect. See *Installing eConnect* on page 4-9.

1. On the terminal, tap *Start - Settings - Control Panel - eConnect*. The *eConnect* window appears.

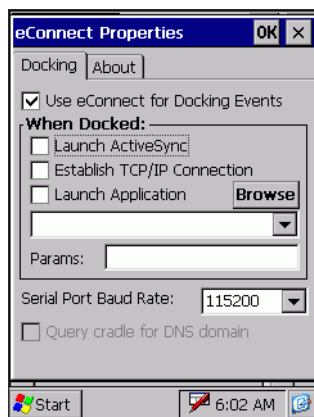


Figure 4-24. eConnect Properties - Docking Tab

2. Enable the *Use eConnect for Docking Events* checkbox.
3. Enable the *Launch ActiveSync* checkbox.
4. Tap **OK**.

Communication

To communicate with a host computer over a network:

1. Insert the terminal into the cradle or a slot on an interconnected serial cradle. This initiates the communication between the terminal and the host computer to automatically ActiveSync the terminal. All local slots in the cradle operate simultaneously.

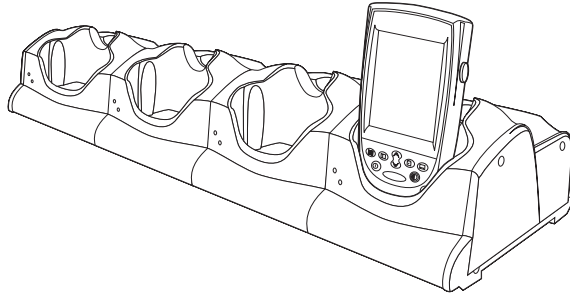


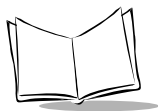
Figure 4-25. Insert Terminal Into the Cradle

2. The cradle's communication LED turns red, then flashes green, indicating that the host computer and terminal are communicating. See *Communication LED Indicator* on page 4-32 for other indications.

Note: *If you remove the terminal from the cradle while the LED is flashing green, you disrupt communication and data may be lost. When the terminal finishes communicating, the slot's LED turns solid green until the terminal is removed from the slot.*

3. On the terminal, a succession of dialog boxes appear, indicating the status of the connection. When successfully connected and synchronized, the status of the host computer is *Connected/Synchronized*.

If the terminal is inserted into an interconnected serial cradle slot while another terminal on the serial cradle chain is communicating with a host computer, the terminal waits (its LED remains red) until the first terminal finishes communicating. Then the slot's LED turns green until the terminal is removed from the slot. To remove the terminal, pull it straight up from the cradle slot.



Communication LED Indicator

Table 4-1. Communication LED Indicator

LED	Indication
Off	Terminal not in cradle; terminal not placed correctly; cradle is not powered.
Solid Red	Terminal is present, but communication has not started.
Flashing Green	Terminal is in the cradle, and communicating with the host computer.
Slow Flashing Red	Error, communication did not start.
Fast Flashing Red	Warning: Terminal inactivity timeout. The terminal did not finish data synchronization or had an open connection for more than 15 minutes. This time is programmable in the cradle flash parameters.
Solid Green	Terminal is present in the slot and communication is complete.
All LEDs Flashing Red	Failed automatic cradle configuration via local DHCP Service.

Using the Universal Cable Cup

1. Ensure that ActiveSync was installed on the host computer and a partnership was created. See *Installing ActiveSync* on page 4-3 and *Setting up a Partnership* on page 4-4.
2. Start ActiveSync if it is not running on the host computer. To start, select *Start - Programs - Microsoft ActiveSync*. The *Microsoft ActiveSync* window appears.

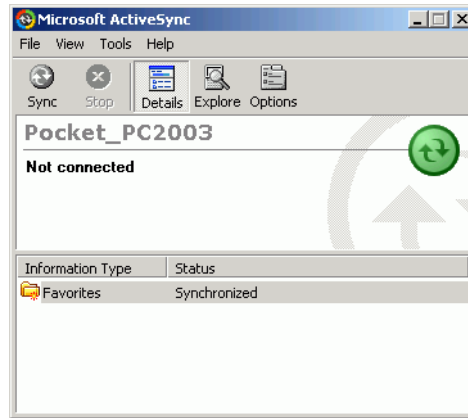


Figure 4-26. ActiveSync - Not Connected

Note: Every terminal should have a unique device name. Never try to synchronize more than one terminal to the same name. See [Device Name Tab](#) on page 3-49 for instructions on changing the device name.

3. Ensure that locking tabs on the cable cup are in the open position (up).
4. Insert the terminal into the cable cup.
5. Press down on the two locking tabs.
6. Pull on the cable cup to ensure that it is securely seated on the terminal.



7. Open the rubber cap covering the serial port.

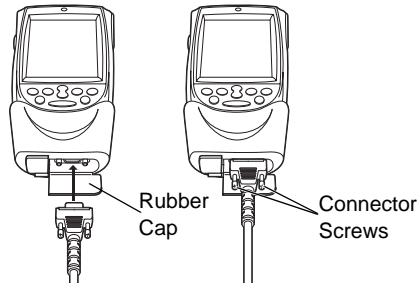


Figure 4-27. Connecting the Communication Cable

8. Connect the cable connector to the serial port.
9. Secure the connector to the cable cup by tightening the two connector screws.
10. Connect the other end of the USB cable to the USB port on your host computer.

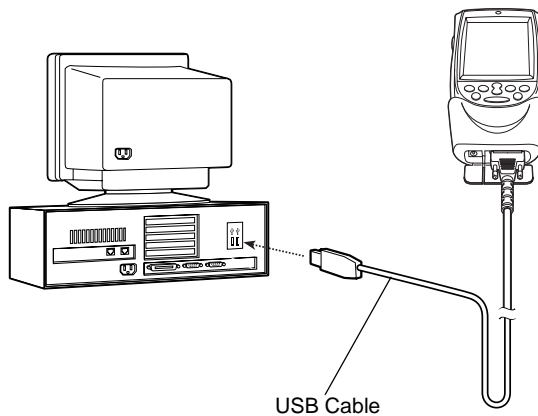


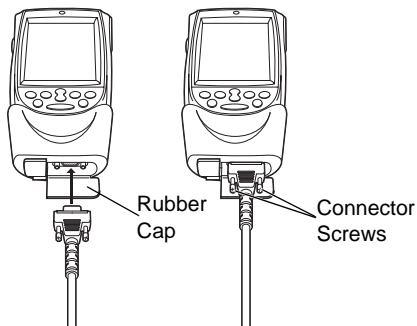
Figure 4-28. Connecting the Cable Cup to Host Computer

11. Turn on the terminal.
12. Upon connection, synchronization occurs automatically.

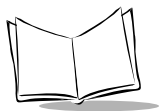
Serial Communication

The UCC 8800 Universal Cable Cup provides the ability to connect the terminal to printers and vending machines.

1. Ensure that locking tabs are in the open position (up).
2. Insert the terminal into the cable cup.
3. Press down on the two locking tabs.
4. Pull on the cable cup to ensure that it is securely seated on the terminal.
5. Open the rubber cap covering the serial port.



6. Connect the cable connector to the serial port.
7. Secure the connector to the cable cup by tightening the two connector screws.
8. Connect the other end of the serial cable to the appropriate device.



Connecting to the Internet on a Wireless Network

With a PPT 8846 terminal, you can connect to the Internet across a wireless network. To set up a wireless connection:

1. Tap the *Mobile Companion* icon on the task tray.

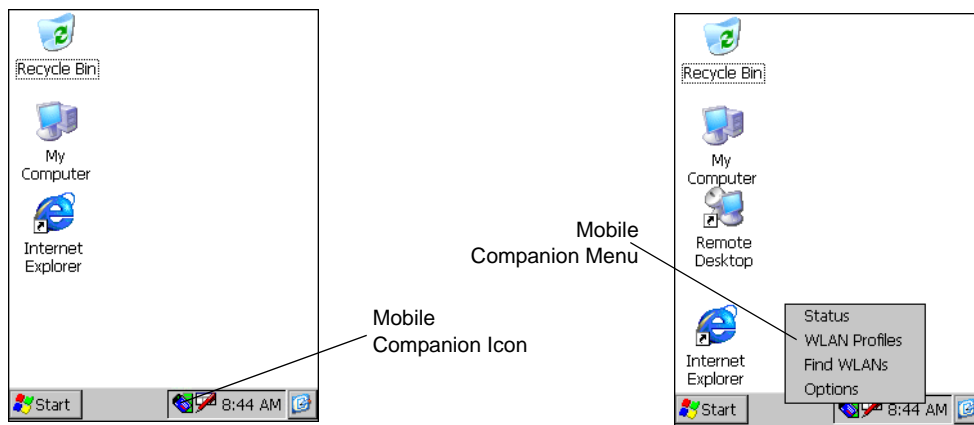


Figure 4-29. Mobile Companion Menu

2. Tap *Find WLANs*. The Mobile Companion window appears.

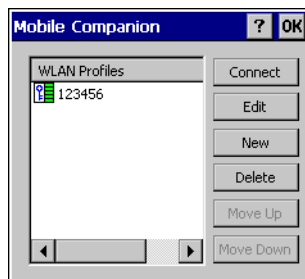


Figure 4-30. Find WLANs Window

3. The terminal tries to locate Access Points (APs) in the area. When it locates a wireless LAN(s), the ESSID name displays in the WLAN Profile list.
4. Tap the ESSID name and then tap **Connect**.

5. The Mobile Companion *Mode* tab appears.

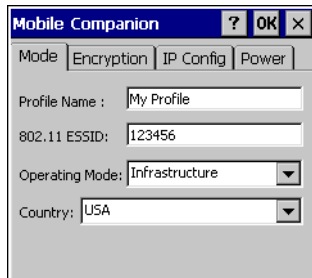


Figure 4-31. Mobile Companion - Mode Tab

6. The profile name and ESSID name appears in the respective fields.
7. In the *Operating Mode*: list, select *Infrastructure*.
8. Tap the *Encryption* tab.

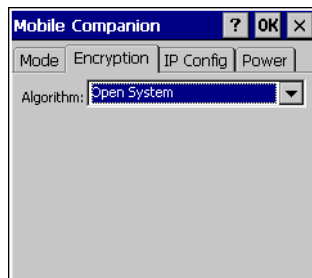
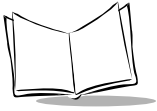


Figure 4-32. Mobile Companion - Encryption Tab

9. Select the encryption algorithm used on the wireless network (Open System, 40-bit Shared Key, 128-bit Shared Key or Kerberos).
If you select 40-bit Shared Key, 128-bit Shared Key or Kerberos, enter the required data in the fields that appear in the window. See your network administrator for this information.



10. Tap the *IP Config* tab.

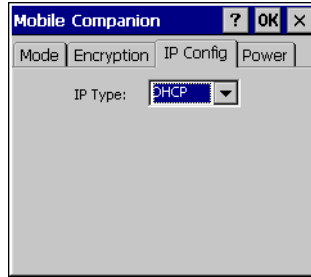
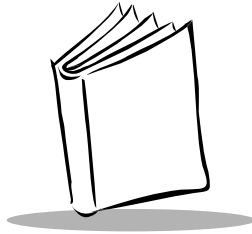


Figure 4-33. Mobile Companion - IP Config Tab (DHCP)

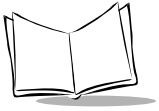
11. In the *IP Type* drop-down menu, select either *DHCP* or *Static*.
If you select static IP, enter the required data in the fields that appear in the window. See your network administrator for this information.
12. Tap **OK**.
13. Tap **OK**.
14. The Mobile Companion wireless status icon should indicate that the terminal is connected to the AP. If the status icon does not indicate that the terminal is connected to the AP, see your system administrator.
15. Select *Start - Programs - Internet Explorer*.
16. In the address bar, enter the URL.



Chapter 5 *Applications*

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Introduction

To open an application installed on the terminal, tap *Start - Programs*. When the Programs menu list displays, tap the program name to launch it. [Table 5-1](#) lists the factory installed applications that appear on the *Programs* menu.

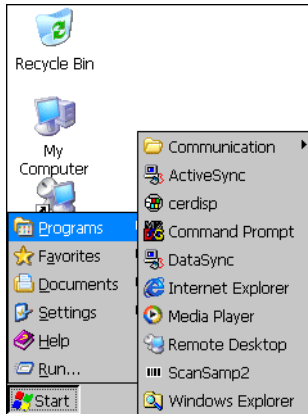




Figure 5-1. Programs Menu

Table 5-1. Program Description

Icon	Program Name	Description
	Terminal	Provides TTY or VT-100 terminal emulation. See <i>Terminal</i> on page 5-5 for more information.
	ActiveSync	Synchronizes data on the terminal with a host computer. See <i>ActiveSync</i> on page 5-6 for more information.
AB	AirBEAM Client	The AirBEAM Client is configured with the server access information, the names of the packages to be downloaded and other controlling parameters. When the Client is launched, the device connects to the specified FTP server and checks the packages it is configured to look for. If the package version has been updated, the client requests the transfer. See Chapter 10, AirBEAM Smart .

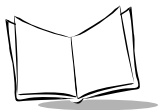








Table 5-1. Program Description

Icon	Program Name	Description
AB	AirBEAM Staging	The AirBEAM Smart staging support is intended to speed up and simplify the process of staging custom or updated operating software onto mobile devices directly from manufacturing. See Chapter 10, AirBEAM Smart .
	Command Prompt	Provides a DOS type command line interface. See <i>Command Prompt</i> on page 5-7 for more information.
	DataSync	Synchronizes data on the terminal with data on the host computer. See <i>DataSync</i> on page 5-8 for more information.
	Internet Explorer	Views intranet and internet web pages. See <i>Internet Explorer</i> on page 5-11 for more information.
	Media Player	Plays audio and video files. See <i>Media Player</i> on page 5-13 for more information. The Media Player is supplied as part of the SDK and can be installed on the terminal.
	ScanSamp2	A sample program, for scanning bar codes. See <i>ScanSamp2</i> on page 5-14 for more information.
	Windows Explorer	Windows Explorer. See <i>Windows Explorer</i> on page 5-17 for more information.

Terminal

Use Terminal to connect to an online service or corporate server that requires TTY or VT-100 terminal emulation. For example, you can view and download files from a bulletin board or send and receive e-mail. Use Terminal only when communicating with services that require terminal emulation.

Creating a New Terminal Session

To create a new terminal session:

1. Select *Start - Programs - Communication - Terminal*.
2. Double-tap the *Make a New Session* icon.
3. In the *Session Name* box, enter a name for the session.
4. In the *Select a Modem* list, select the name of your modem.
5. Enter the telephone number for the remote computer.
6. Unless you need to adjust the emulation properties, tap **OK** to connect.

Note: *The session you created appears as an icon in the Terminal folder.
To disconnect, select File - Cancel.*

Connecting using an Existing Session

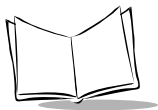
To connect to an existing session:

1. In the *Terminal* window, double-tap the icon for the session you want to use. When the terminal is connected to the online service, the Terminal window appears.
2. You can create a desktop shortcut for the session, and connect by double-tapping it.
3. To disconnect, select *File - Cancel*.

Adjusting Session Properties

To set the Terminal properties:

1. In the Terminal window, select the icon for the session you want to modify.
2. Tap **Properties**.
3. In the *Communications* tab, modify the settings as needed.



4. To modify the emulation settings, select the *Emulation* tab.
5. In the *Choose an emulation type* list, select the type of terminal to emulate.
6. In the *Code page selection* list, select the code page option for the character set you want.
7. To display the text you type before sending, select *Local Echo*.
8. In the *Use small font by default* box, set your font preference.
9. In the *CR -> CR/LF* box, adjust the carriage return/line feed, and select *Inbound* or *Outbound* settings.
10. In the *Automatic Scrolling* box, set your scrolling preference.
11. When finished, tap **OK**.

ActiveSync

Using Microsoft ActiveSync, you can synchronize the information on your desktop computer with the information on terminal. Synchronization compares the data on the terminal with your desktop computer and updates both computers with the most recent information.

ActiveSync automatically connects when the terminal is connected to the host computer. If ActiveSync was disconnected, start ActiveSync. Tap *Start - Programs - ActiveSync*. The terminal begins to connect to the host computer.

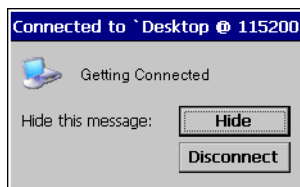


Figure 5-2. Connecting to Host Computer

Copying Files

Copying a file results in separate versions of a file on your terminal and desktop computer. Since the files are not synchronized, changes made to one file will not affect the other.

1. Connect your terminal to your host computer.
2. In ActiveSync on the host computer, click **Explore**. Windows Explorer will open the Mobile Device window for your terminal.

3. Open a new Windows Explorer and browse to the file that you want to copy on your terminal or host computer.
4. Do one of the following:

To copy the file to your terminal, right-click the file and select Copy. Place the cursor in the desired folder on your terminal, right-click, and select Paste.

To copy the file to your host computer, right-click the file and select Copy. Open a new Windows Explorer, browse to the desired folder on your host computer, right-click, and select Paste.

Command Prompt

Command Prompt is a shell application that looks similar to DOS. It is not a DOS emulator but a way to use a command line interface. You are limited to 10 different console windows or applications at any given time. To use the console:

1. Select *Start - Programs - Command Prompt*.
2. The Command Prompt window appears.

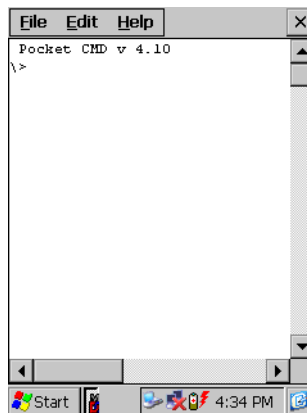


Figure 5-3. Command Prompt Window

3. At the command prompt you can launch applications by typing their filename and pressing the Enter key.



DataSync

Use *DataSync* to synchronize data between the terminal and host computer.

1. Connect the terminal to the host computer.
2. Ensure that *ActiveSync* is running on the host computer.
3. Select *Start - Programs - DataSync*. The *Connection Status* window appears.

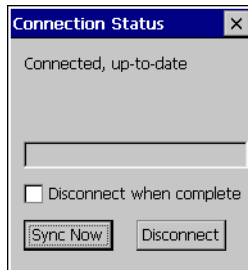


Figure 5-4. DataSync - Connection Status Window

4. Tap **Sync Now**.

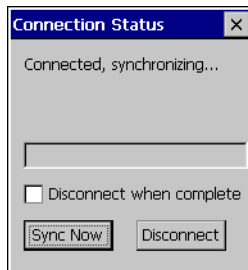


Figure 5-5. Data Synchronizing

5. Data will sync between the terminal and host computer.

Remote Desktop

Using the Remote Desktop connection you can log onto a Windows Terminal Server and use all programs installed on this server. For example, instead of running Microsoft Pocket Word, you can run the desktop version of Microsoft Word.

Connecting to a Terminal Server

To connect to a terminal server:

1. Select *Start - Programs - Remote Desktop Connection*, or run 'MSTSC' from the command prompt. The initial Remote Desktop Connection window appears.

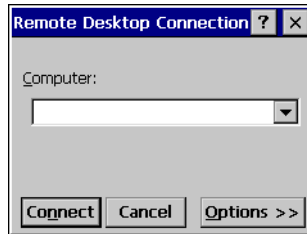


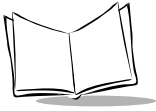
Figure 5-6. Remote Desktop Connection Window

2. In the *Computer* drop-down list, type a Terminal Server name or TCP/IP address, or select a server.
3. Tap **Connect**.
4. In the next *Remote Desktop Connection* window, type your user name, password, and domain (if required), and then tap **OK**.

Disconnecting Without Ending a Session

To disconnect a session:

1. In the *Remote Desktop Connection* window, select *Start - Shutdown*.
2. Tap **Disconnect**.
3. Tap **OK**.



Note: *If you previously disconnected from a Terminal Server without ending the session, the Terminal Server will continue to execute any running processes. Remote Desktop Connection can later reconnect to this same session (if your administrator configured Remote Desktop Connection to reconnect to disconnected sessions).*

Disconnecting and Ending a Session

To end a session:

1. In the *Remote Desktop Connection* window, select *Start - Shutdown*.
2. Tap **Log Off**.
3. Tap **OK**.

Internet Explorer

With Internet Explorer, you can view Internet or intranet Web pages on your terminal. You need to use a modem, an Ethernet connection or a Spectrum24 connection to connect to an Internet service provider (ISP) or network.

To open Internet Explorer, tap *Start - Programs - Internet Explorer*.

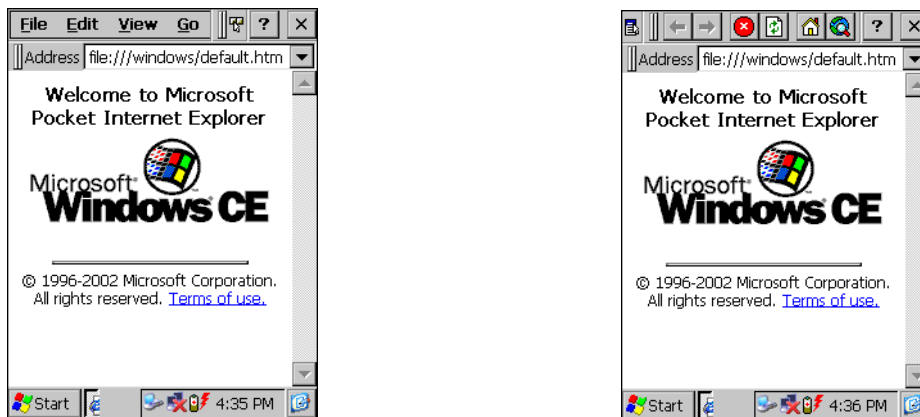
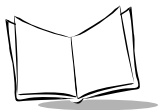


Figure 5-7. Pocket Internet Explorer

Browsing the Web

To browse the Web:

1. Connect to a network using a wireless connection. See *Connecting to the Internet on a Wireless Network* on page 4-36.
2. Once connected, go to a specific Web page in one of the following ways:
 - Select *View*, then *Address Bar* (if the Address bar is not already displayed). In the address bar, using the soft keyboard or 15-key keypad, enter the Web address. Press or tap the ENTER key. You can also tap the Address Bar drop-down arrow to choose from previously entered addresses.
3. To end the connection, select *File - Close*.



Note: *If you select Internet Explorer before setting up the network connections, a window may appear allowing you to proceed to the connection settings window. After you select your settings, you return to Internet Explorer.*

Setting up a Proxy Server

Proxy servers are often used when connecting to the Internet through a local network, such as a corporate network, for added security. To set the proxy server settings:

1. From the Menu bar, select *View - Options - Proxy Server* tab.
2. Select *Use Proxy Server*.
3. Enter the proxy server address and port. For more information, see your network administrator.
4. To bypass the proxy server for local addresses, such as corporate intranet pages, select *Bypass Proxy for Local Addresses*.
5. Tap **OK**.

Enable Cookies

A cookie file contains information about your identity and preferences so that a Web site can tailor information to your needs. The Web site sends the file, and it is stored on the terminal.

1. From the Menu bar, select *View - Options - Advanced* tab.
2. Select *Enable Cookies*.
3. Tap **OK**.

Media Player

With Windows Media Player on the PPT 8800 you can play digital audio and video files that are stored on your terminal. The Media Player is supplied as part of the SDK and can be installed on the terminal. To open Windows Media Player, select *Start - Programs - Media Player*.

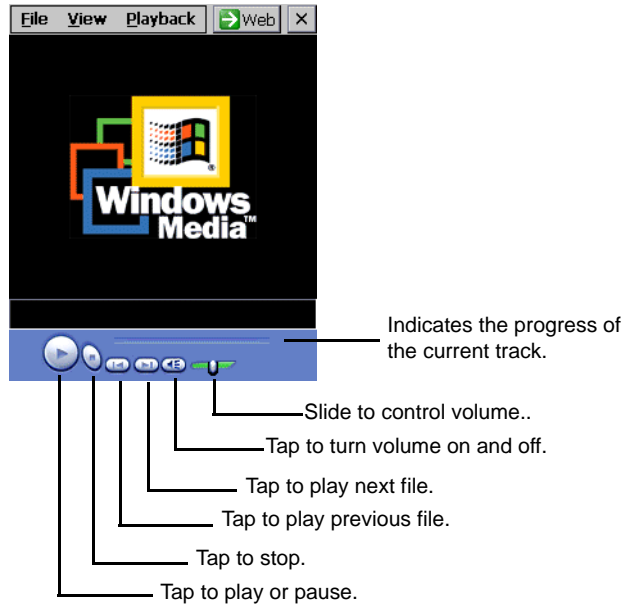
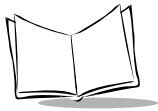


Figure 5-8. Media Player Window



ScanSamp2

The sample scanning application enables the terminal's scanner, allows the user to change scan parameters, and displays scanned data. To access ScanSamp2 select *Start - Programs - ScanSamp2*.

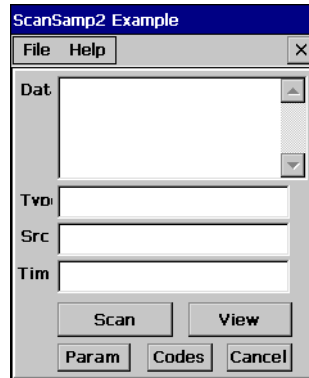


Figure 5-9. ScanSamp2 Example Window

Scanning Data Fields

After a bar code is scanned, the following data appears in the scan window:

- *Data* displays the data encoded in the scanned bar code.
- *Type* indicates the hex type scanned.
- *SRC* indicates the scanner being used and the bar code type scanned (e.g., Code 128).
- *Time* displays the time the bar code was scanned.

Scanning Options

The following options are available in the *Scan* window:

- Tapping the **Scan** button provides an alternative to the trigger buttons on the terminal.

- Tapping the **View** button displays the bar code content in a separate window.



Figure 5-10. View Window

- Tapping the **Param** button allows you to change options, such as:
 - scanning feedback parameters:
 - beep time (length of decode beep)
 - beeper frequency (tone)
 - LED-on time (length of time LED remains on upon decode)
 - Wav File (sound of decode beep)
 - Code ID (AIM, Symbol)
 - Scan type (foreground, background, monitor).

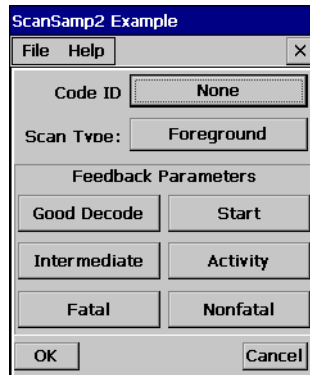
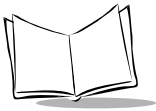


Figure 5-11. Parameter Window



- Tapping *Codes* allows the selection of the code types the terminal is able to decode, and allows you to set the options for each code type. (**Param** and **Length** buttons.)

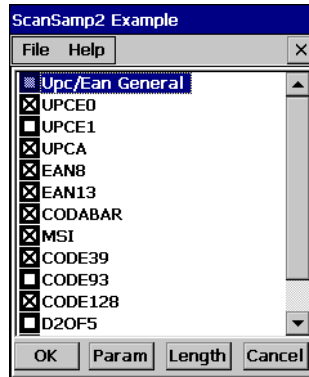


Figure 5-12. Codes Window

- Tapping **Cancel** closes the *ScanSamp2* window.

Windows Explorer

Windows Explorer allows you to browse, cut, copy, paste, and delete files as well as execute the program.

To open Windows Explorer select *Start - Programs - Windows Explorer*.

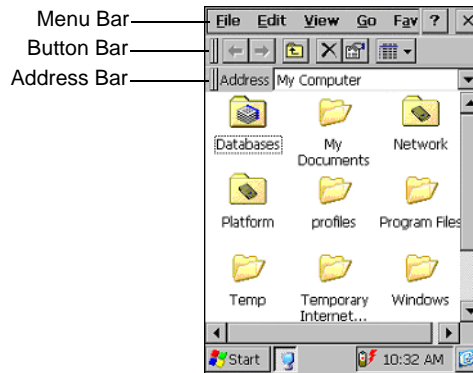


Figure 5-13. Windows Explorer Window

Windows Explorer contains a button bar, menu bar and address bar that allows you to navigate organize files on the terminal.

Viewing Files as Icons or Lists

1. To view icons, select *View - Large Icons* or *Small Icons*.
2. To view a list, select *View - Details*.

Creating a New Folder

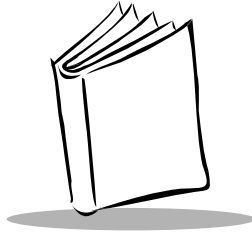
To create a new folder:

1. If necessary, open the folder where you want the new folder to reside.
2. Select *File - New Folder*.
3. Enter a name for the new folder.
4. Double-tap a program icon to open. The program starts.



Network and Dialup Connections

The Network and Dialup Connection is used to access network resources from a remote location. First, a connection is established with the remote computer, and then the Windows CE based device, or client, can upload and download files.

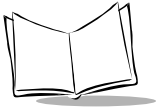


Chapter 6

Spectrum24 Network Configuration

Chapter Contents







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Introduction

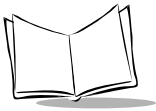
Wireless LANs allow PPT 8846 terminals to communicate wirelessly, and to send captured data “real time” to a host device. Before a terminal can be used on a Spectrum24 LAN your facility must be set up with the equipment required to run the wireless LAN and the terminal must be properly configured. Refer to the documentation that came with your Access Points (APs) for instructions on setting up the required hardware.

The PPT 8846 terminal Network Adapter settings and Spectrum24 settings configure and monitor the wireless connection. The Mobile Companion icon appears in the task tray, and indicates terminal signal strength as follows:

Icon	Status
	Excellent signal strength
	Very good signal strength
	Good signal strength
	Fair signal strength
	Poor signal strength
	Out-of-network range (not associated)

Mobile Companion

The *Mobile Companion* utility is used to configure the terminal's wireless network settings. The *Mobile Companion* utility starts automatically and appears as an icon on the task tray. The status icon changes in real-time to reflect the signal strength and availability of the



adapter and the wireless network. Tap the icon on the task tray to open the Mobile Companion menu.

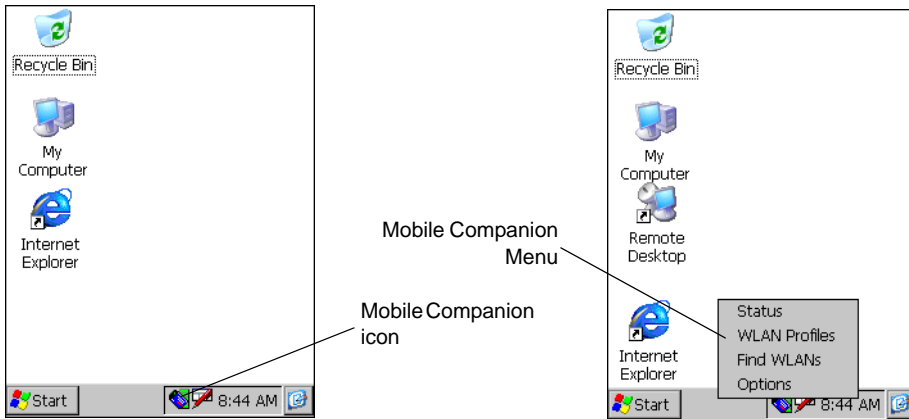


Figure 6-1. Mobile Companion Menu

When the menu opens, the user can select *Status*, *Find WLANs*, *WLAN Profiles* or *Options* menu options.

Table 6-1. Mobile Companion Menu Descriptions

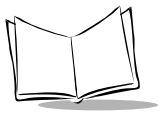
Menu Item	Description
Status	<p>Displays the current status and information for the wireless connection.</p> <p><i>Signal</i> tab - displays radio signal transmission strength from the adapter (using its current profile) to the associated AP.</p> <p><i>Info</i> tab - displays software, driver, firmware, hardware, and country information for the current profile.</p> <p><i>IP Status</i> tab - displays network address information.</p> <p><i>Ping</i> tab - displays signal strength data, data rate, and conduct data transmission tests between the terminal and associated AP or client.</p>

Table 6-1. Mobile Companion Menu Descriptions (Continued)

Menu Item	Description
Status (Contd)	<p><i>APs</i> tab - displays APs with the same ESSID as the current terminal profile. The terminal's roaming capabilities can be set from this tab.</p> <p><i>Peers</i> tab - displays the BSSIDs, power modes, transmit rates and data rates of other networked clients within the Ad Hoc (peer-to-peer) network. When in <i>Ad Hoc</i> operating mode, the <i>Peers</i> tab displays instead of the <i>APs</i> tab.</p>
WLAN Profiles	Displays the current profiles and allows the user to add, edit and delete profiles.
Find WLANs	Displays a list of those Spectrum24 networks (APs and networked peers) available to the terminal for association. The networks are listed by their ESSID. To the right of each network is a signal strength icon. Networks with a signal strength of Good (three green bars out of five) or better should be considered for connection. Tap a network and tap Connect to interoperate with the AP representing that network. Once connected, the <i>Mode</i> , <i>Encryption</i> , <i>IP Config</i> and <i>Power</i> tabs display the ESSID, security settings, network address information and power consumption level set for that network. See <i>Finding WLANs</i> on page 6-5 for more information.
Options	Displays settings for configuring battery consumption avoidance capabilities, system sounds, AP and terminal association capabilities, profile roaming options, as well as password protecting the Mobile Companion utility.

Finding WLANs

A completed profile is a set of terminal configuration settings that can be used in different locations to connect to a Spectrum24 network. Creating different profiles is a good way of having pre-defined terminal operating parameters available for use in various Spectrum24 network environments.



Select *Find WLANs* from the Mobile Companion menu to locate the APs in the area. The *Mobile Companion* window displays the available WLAN networks.

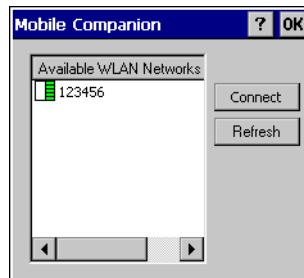
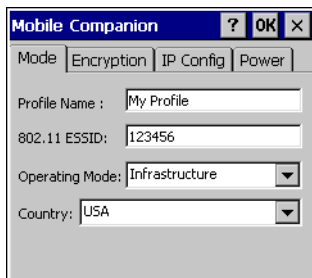
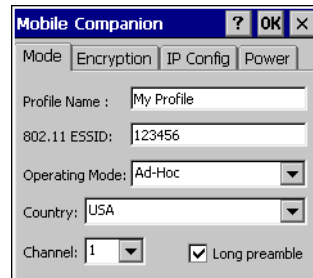


Figure 6-2. Available WLAN Networks

1. Select an available WLAN network from the list.
2. Tap **Connect**. The *Mode* tab displays.



Infrastructure Mode



Ad Hoc Mode

Figure 6-3. Mode Tab

3. The *Profile Name*: and *802.11 ESSID*: fields are populated with the name and (WLAN) identifier of the network connection. You can change the *Profile Name*: if desired.

Use the *Profile Name* field to enter the name of the terminal profile used to transmit with either an AP or another networked computer.

The ESSID is the 802.11 Extended Service Set Identifier. The ESSID is 32-character (maximum) string identifying the WLAN. The ESSID assigned to the terminal is required to match the AP ESSID for the terminal to communicate with the AP.

4. In the *Operating Mode*: drop-down list, select the operating mode:

Infrastructure	Select <i>Infrastructure</i> to enable the terminal to transmit and receive data with an AP. Infrastructure is the terminal default mode when Mobile Companion initially displays.
Ad Hoc	Select <i>Ad Hoc</i> to enable the terminal to form its own local network where terminals communicate peer-to-peer without APs using a shared ESSID. Select the <i>Long preamble</i> checkbox if the terminal and its profile are using a long preamble when transmitting data. A long preamble is approximately 8 bytes of the packet header attached to the packet prior to transmission. Devices in Ad Hoc mode are required to use the same preamble length to interoperate. The terminal initiating the Ad Hoc network sets the channel (using the <i>Channel</i> drop-down list) used by each peer in the Ad Hoc network.

5. In the *Country*: drop-down list, select the country of operation for the terminal. This ensures the terminal is using country code information compatible with the country code data used by the associated AP. Select *International* if using the terminal with a non-Symbol AP or a pre AP-4131 model.
6. Select the *Encryption* tab to set the terminal profile security level.

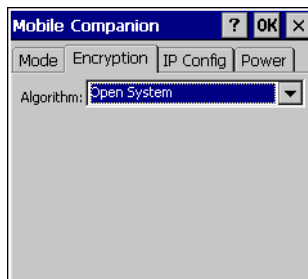
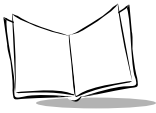


Figure 6-4. Encryption Tab

The terminal supports Open System (no encryption), 40-bit Shared Key, 128-bit Shared Key and Kerberos encryption algorithms. The absence of a physical connection makes wireless links vulnerable to information theft. Encryption is an efficient method of preventing data theft and improving data security.



The AP and the terminal are required to use the same encryption algorithm to associate and transmit data. If an AP is set to Open System and an adapter is set to 40-bit or 128-bit, no association takes place. Similarly, if an adapter is set to Open System and an AP is set to 40-bit or 128-bit, no association takes place.

If an AP is set to 40-bit and a terminal is set to 128-bit the terminal can associate to the AP, but no data transmission and reception can take place.

7. Select one of the following *Encryption* options from the *Algorithm*: drop-down list:

Open System (no encryption)	Use the Open System option as the default setting when no data packet encryption is needed over the network. Selecting Open System provides no security for the data being transmitted over the network.
40-bit Shared Key	Select 40-bit encryption and enter a 10-digit hex encryption key. Tap Reset Keys to set the encryption key to the default values.
128-bit Shared Key	Select 128-bit encryption and enter a 26-digit hex encryption key. The 128-bit encryption option provides a higher level of security than 40-bit encryption while maintaining an 11 Mbps data rate. Tap Reset Keys to set the encryption key to the default values.

Note: The default Hex digit keys are visible any time they are used. As a security precaution after setting the key values for the network, the digits are replaced with asterisks * within the encryption key fields.

If the associated AP is using an optional **Passkey**, the "active" terminal profile is required to use one as well. The Passkey is a plain text representation of the WEP keys displayed in the *Encryption* tab. The Passkey provides an easy way to enter WEP key data without having to remember the entire 40-bit (10 character) or 128-bit (26 character) Hex digit string.

Tap **Passkey** to display the *Passkey* window. Enter an easy-to-remember 4 to 26 character string to be used as the WEP algorithm. Tap **OK**. The AP transforms the Passkey string into a set of four WEP keys using MD5 algorithms and displays them in the *WEP* fields. These are the new WEP keys for the terminal profile. Once displayed in the WEP key fields, the adapter profile behaves as if the keys were entered manually.

Kerberos

Kerberos is a different form of 128-bit data security whereby a terminal is required to have its request for AP resources authenticated with a Kerberos server before the server permits the AP to transmit and receive data with the associated terminal.

Select *Kerberos* and enter the key distribution center (*KDC*) and *Realm* values. The KDC is located on a server and maintains information about the APs and users it supports. The KDC also permits the transmission and receipt of data once the credentials of the user are verified. Enter the name of the server that hosts the Kerberos KDC in the *Realm* field.

8. Select the *IP Config* tab to configure the following terminal profile network address parameters: IP address, subnet, gateway, DNS and WINS. Changes made within the *IP Config* tab only impact the profile selected in the *Mode* tab and do not impact the network address parameters configured for other profiles.

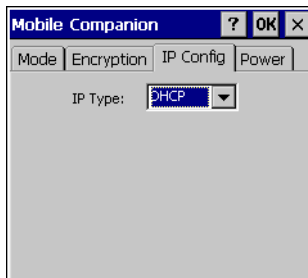
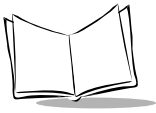


Figure 6-5. Mobile Companion - IP Config Tab (DHCP)

- Select Dynamic Host Configuration Protocol (*DHCP*) from the *IP Type* drop-down list to obtain a leased IP address and network configuration information from a remote server. DHCP is the default setting for the terminal profile. When DHCP is selected, the IP address fields are read-only.



- Select *Static* to manually assign the IP, subnet mask, default gateway, DNS and WINS addresses used by the terminal profile.

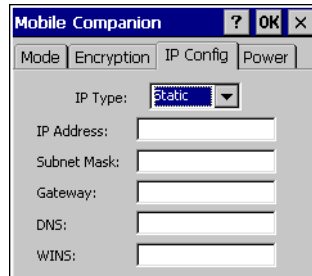


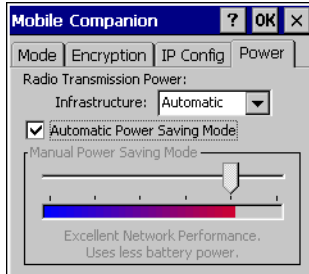
Figure 6-6. Mobile Companion - IP Config Tab (Static)

IP Address	The Internet is a collection of networks with users that communicate with each other. Each communication carries the address of the source and destination networks and the particular machine within the network associated with the user or host computer at each end. This address is called the IP address (Internet Protocol address). Each node on the IP network must be assigned a unique IP address that is made up of a network identifier and a host identifier. Enter the IP address as a dotted-decimal notation with the decimal value of each octet separated by a period, for example, 192.168.7.27.
Subnet Mask	Most TCP/IP networks use subnets in order to effectively manage routed IP addresses. Having an organization's network divided into subnets allows it to be connected to the Internet with a single shared network address, for example, 255.255.255.0.
Gateway	The default gateway is a device that is used to forward IP packets to and from a remote destination.
DNS	The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate domain names and IP addresses. It is also used to control Internet email delivery. Most Internet service requires DNS to operate properly. If DNS is not configured, Web sites cannot be located and/or email delivery fails.

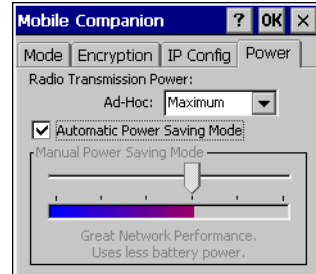
WINS

WINS is a Microsoft® Net BIOS name server. WINS eliminates the broadcasts needed to resolve computer names to IP addresses by providing a cache or database of translations.

9. Select the *Power* tab to set the *Radio Transmission Power* level and the *Power Saving Modes* for the terminal profile.



Infrastructure Mode

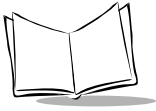


Ad Hoc Mode

Figure 6-7. Mobile Companion - Power Tab

Adjusting the *Radio Transmission Power* level enables you to expand or confine the transmission area with respect to other wireless devices that could be operating nearby. Reducing a coverage area in high traffic areas improves transmission quality by reducing the number of noises in that coverage area.

- In Infrastructure mode there are two transmission power options:
 - Select *Automatic* to use the AP power level. *Automatic* is the default mode for terminals operating in Infrastructure mode.
 - Select *Power Plus* to set the terminal transmission power one level higher than the level set for the AP.
- In Ad Hoc mode there are five transmission power options:
 - Select *Maximum* power to set the terminal to the highest transmission power level. Select *Maximum* power when operating in highly reflective environments and areas where other devices could be operating nearby. Additionally, use the maximum power level when attempting to communicate with devices at the outer edge of a coverage area.



- Choose 50%, 25% or 10% to set the transmit power level to that percentage of the maximum power level.
- Choose *Minimum* power to set the terminal to the lowest transmission power level. Use the minimum power level when communicating with other devices in very close proximity. Additionally, select minimum power in instances where little or no radio interference from other devices is anticipated.

The *Automatic Power Saving Mode* switches to *Best Network Performance* when an AC power supply is detected. If a battery is used, an appropriate setting between *Best Network Performance* and *Acceptable Network Performance* is automatically chosen based on a real-time analysis of network usage. The *Automatic Power Saving Mode* is the default setting and extends the operating time before the battery is recharged.

The *Manual Power Saving Mode* allows you to select a performance level suited to intended operation. There are six settings ranging from the *Best Network Performance* (using the most battery power) to *Acceptable Network Performance* (using the least battery power). A network performance description is displayed for each power range.

10. Tap **OK** to implement power consumption changes for the terminal profile.

Status

To view the status of the wireless network connection, select *Status* from the Mobile Companion menu.

1. Select the *Signal* tab to display a real-time graph of the signal quality of the terminal to the associated AP (Infrastructure Mode only). The number of times the terminal has roamed to and from APs, the current data rate, and the network status are

displayed. Signal quality is an indicator of how clearly the adapter can hear the associated AP.

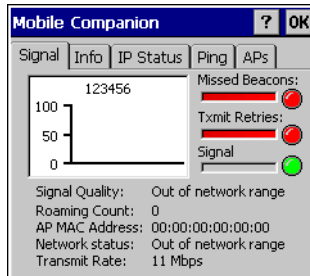
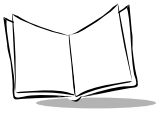


Figure 6-8. Mobile Companion - Signal Tab

- | | |
|--|---|
| Missed Beacons | Displays the amount of beacons (uniform system packets broadcast by the AP to keep the network synchronized) missed by the terminal. The fewer the missed beacons the better the signal. As long as the LED to the right of the graph is green the AP association is not jeopardized by an excess of missed AP beacons. If the LED is Red, an association with a different AP could be warranted to reduce the amount of missed beacons and improve the signal. |
| <i>Txmit Retries</i>
(Transmit Retries) | Displays the number of data packets retransmitted by the terminal. The fewer transmit retries the stronger the signal. As long as the LED to the right of the graph is green the AP association is not jeopardized. If the LED is red, an association with a different AP could be warranted to reduce the amount of transmit retries and improve the signal. |
| Signal | Displays the Relative Signal Strength Indicator (RSSI) of the signal transmitted between the AP and terminal. As long as the LED to the right of the graph is green the AP association is not jeopardized. If the LED is red, an association with a different AP could be warranted to improve the signal.
<i>Note: The Signal tab is view only and is not available if the current operating mode is Ad Hoc.</i> |



2. Select the *Info* tab to view the terminal's current software and driver revision data as well as the operating parameters of the current profile.



Figure 6-9. Mobile Companion - Info Tab

Version Information	Displays the terminal's software, driver, firmware and hardware versions as well as country information. This data is consistent for the terminal regardless of which terminal profile is the current profile.
Current Status	Displays the terminal's current Profile Name, ESSID, and Encryption mode. Terminal performance is displayed using a verbal indicator of signal strength. Terminal operating information differs depending on which profile has been enabled as the current profile.

3. Select the *IP Status* tab to view the terminal's network address information. Unlike the *IP Config* tab in Finding WLANs, the *IP Status* tab is view only with no user-configurable data fields.

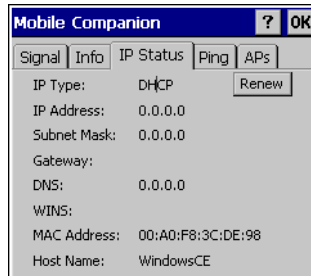
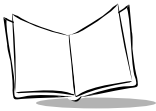


Figure 6-10. Mobile Companion - IP Status Tab

IP Type	If DHCP was selected from the <i>IP Config</i> tab, leased IP address and network address data displays for the terminal. If Static was selected, the values displayed were input manually in the <i>IP Config</i> tab.
IP Address	The Internet is a collection of networks with users that communicate with each other. Each communication carries the address of the source and destination networks and the particular machine within the network associated with the user or host computer at each end. This address is called the IP address. Each node on the IP network must be assigned a unique IP address that is made up of a network identifier and a host identifier. Enter the IP address as a dotted-decimal notation with the decimal value of each octet separated by a period, for example, 192.168.7.27.
Subnet Mask	Most TCP/IP networks use subnets in order to effectively manage routed IP addresses. Having an organization's network divided into subnets allows it to be connected to the Internet with a single shared network address, for example, 255.255.255.0.
Gateway	The gateway is a device that is used to forward IP packets to and from a remote destination.



DNS	The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate domain names and IP addresses. It is also used to control Internet e-mail delivery. Most Internet service requires DNS to operate properly. If DNS is not configured, Web sites cannot be located or e-mail delivery fails.
WINS	WINS is a Microsoft Net BIOS name server. WINS eliminates the broadcasts needed to resolve computer names to IP addresses by providing a cache or database of translations.
MAC Address	An IEEE 48-bit address the terminal is assigned at the factory that uniquely identifies the adapter at the physical layer.
Host Name	Displays the name of the terminal.

4. Tap **Renew** to refresh the information displayed on the *IP Status* tab.
5. Select the *Ping* tab to send and receive ICMP ping packets across the network to the specified IP address.

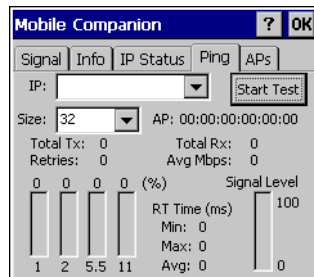


Figure 6-11. Mobile Companion - Ping Tab

6. In the *IP* drop-down list, select a target device IP address.
7. In the *Size* drop-down list, select the size of the packet transmission.
8. Tap **Start Test** to begin the ping test.
9. Tap **Stop Test** to terminate the ping test.

The average mega-bits per second, signal strength, data rate currently in use, test statistics and round trip (RT) times are displayed for each test. The associated AP MAC address is also displayed. The signal strength level and the data transmission rate are displayed in real-time bar graphs.

10. Select the *APs* tab to view APs with the same ESSID as the terminal's profile.

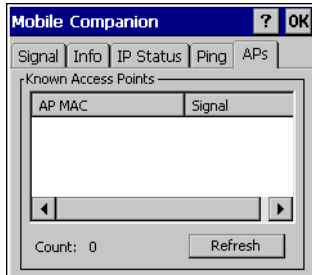


Figure 6-12. Mobile Companion - APs Tab

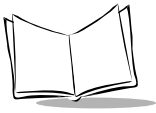
The associated AP displays a radio wave radiating from its antenna to indicate its associated status. Tapping on the icon displays a menu with *Set Mandatory* and *Set Roaming* options.

Selecting the *Set Mandatory* item prohibits the terminal from associating with a different AP. The letter *M* displays on top of the icon when the *Set Mandatory* option has been selected.

Selecting *Set Roaming* allows the terminal to roam to any AP with a better signal. These settings are temporary and never saved to the registry.

Tap **Refresh** to update the list of the APs with the same ESSID. A signal strength value of 32 is the highest possible. The *APs* tab only displays when Infrastructure is selected as the terminal operating mode from the *Mode* tab.

11. If the terminal is in Ad Hoc mode, select the *Peers* tab displays the BSSID or MAC addresses of the other terminals in the network, their operating mode (PSP or CAM), their transmit rate, their supported data rate and the length of time an



adapter has been out of the Ad Hoc network. Tap *Refresh* to update the *Peers* tab to the latest Ad Hoc network performance and terminal membership data.

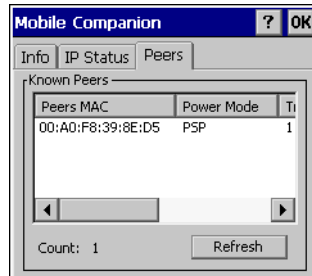


Figure 6-13. Mobile Companion - Peers Tab

Setting Options

Select *Options* from the Mobile Companion menu to enable or disable international roaming, configure consumption avoidance capabilities, enable system sounds, and set temporary settings.

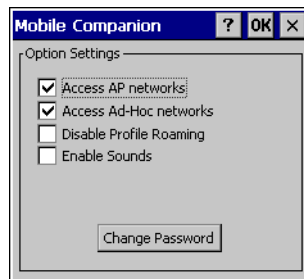


Figure 6-14. Mobile Companion - Option Settings

1. Select the *Access AP networks* checkbox to display available AP networks and their signal strength within the *Available WLAN Networks* tab. These are the APs available to the terminal profile for association. If this option was previously disabled, refresh the *Available WLAN Networks* tab to display the AP networks available to the terminal.
2. Select the *Access Ad-Hoc networks* checkbox to display available peer (adapter) networks and their signal strength within the *Available WLAN Networks* tab. These are peers available to the terminal profile for association. If this option was

previously disabled, refresh the *Available WLAN Networks* tab to display the Ad Hoc networks available to the terminal.

3. Select the *Disable Profile Roaming* checkbox to disable the terminal from roaming and associating to APs with country codes other than the United States.
4. Select the *Enable Sounds* checkbox to initiate an audible signal when performing a ping test and associating with an AP. The tones are important to notify users if the pinging is received or if the terminal has roamed to another AP.

Note: *Mobile Companion has a password protection feature. When Mobile Companion initially displays, the password is off by default.*

5. To create a password, tap **Change Password**.

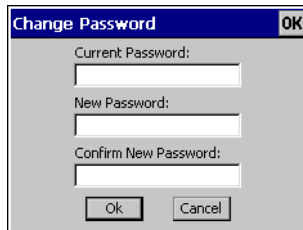
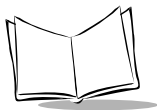


Figure 6-15. Mobile Companion - Change Password

6. Enter a case sensitive password (10 characters maximum) in the *Current Password* field and tap **OK**. To change the current password, enter the current password in the *Current Password* field and enter a new password in the *New Password* and *Confirm Password* fields and tap **OK**.

Changing Profiles

Select *WLAN Profiles* from the Mobile Companion menu to view, connect to, create and edit a profile. A completed profile is a set of adapter configuration settings that can be used in different locations to connect to a wireless network. Creating different profiles is a good way of having pre-defined operating parameters available for use in various network



environments. When the *WLAN Profiles* initially displays, existing profiles appear in the *WLAN Profiles* list.

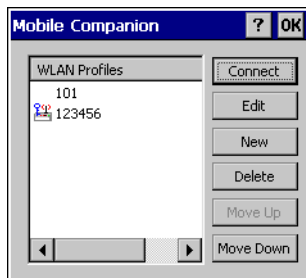


Figure 6-16. Mobile Companion - WLAN Profiles

Select a profile from the list and tap **Connect** to set that profile as the active profile. The active profile displays the transmit and receive icon to the left. Once selected, the terminal is using the ESSID, encryption and power consumption settings initially configured for that profile.

Editing a Profile

Select a profile from the list and tap **Edit** to display the *Mode* tab where the ESSID and operating mode can be changed for the profile. Use the *Encryption*, *IP Config*, and *Power* tabs as necessary to edit the profile power consumption and security parameters.

Creating a New Profile

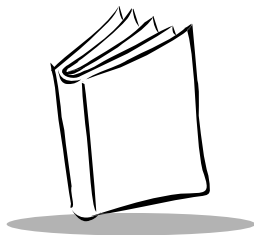
Tap **New** to display the *Mode* tab wherein the profile name and ESSID can be set. Use the *Encryption*, *IP Config* and *Power* tabs as required to set security, network address information and power consumption level for the new profile.

Deleting a Profile

Select a profile to delete from the list and tap **Delete** to remove the selected profile.

Ordering Profiles

Select a profile from the list and tap **Move Up** or **Move Down** to order the profile. If the current profile association is lost, Mobile Companion attempts to associate with the first profile in the list and then the next until a new association is achieved.

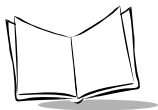


Chapter 7

Bluetooth

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Introduction

The PPT 8860 terminal provides Bluetooth communication with Bluetooth enabled devices such as phones, printers, access points (APs) and other terminals.

Turning Bluetooth On and Off

Turn off the Bluetooth radio to save power or if entering an area with radio restrictions (e.g., an airplane).

1. Tap the *Bluetooth* icon - *Turn Transmitter OFF*.

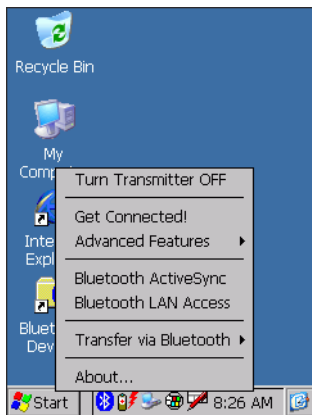


Figure 7-1. Bluetooth Menu - Turn Transmitter Off



-
2. The Bluetooth radio transmitter turns off. The *Bluetooth* icon becomes gray, as well as relevant menu options.

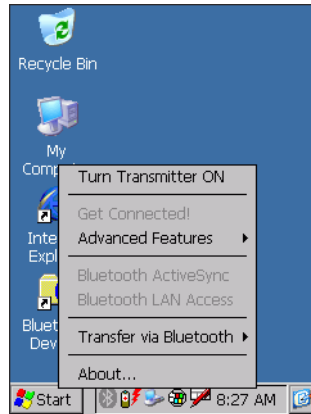


Figure 7-2. Bluetooth Menu - Turning Transmitter On

-
-
3. To turn the Bluetooth radio transmitter back on, tap the gray *Bluetooth* icon.
4. Select *Turn Transmitter ON*.

Note: When the terminal is placed in suspend mode, the Bluetooth radio turns off. When the terminal resumes, it takes 10 seconds for the Bluetooth radio driver to re-initialize the radio.

Connecting to a Bluetooth Phone

The *Get Connected! Wizard* guides you through a one-time setup process that prepares the terminal and a Bluetooth enabled phone for connection. The wizard varies depending on the phone.

Ericsson, Nokia 6210, NTT DoCoMo, Sony Phones

1. Tap the *Bluetooth* icon - *Get Connected! The Get Connected! Wizard* window appears.



Figure 7-3. Get Connected! Wizard Window



2. Tap **Next >**.



Figure 7-4. Select Your Phone Window

3. In the *My Bluetooth phone is:* drop-down list, select a Bluetooth phone. The wizard provides tailored instructions based on the selection. Tap **Next >**.
4. The next window(s) vary and provide instructions for preparing the phone for Bluetooth connections. Some or all of the following may need to be performed:
 - Naming the Bluetooth phone
 - Setting the Bluetooth phone in discoverable mode
 - Preparing a Bluetooth passkey.

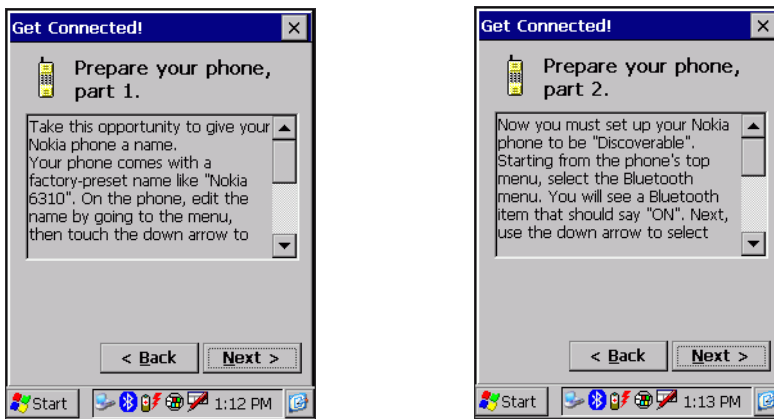


Figure 7-5. Get Connected! Wizard Windows

5. Read the instructions and perform the task on the phone then tap **Next >**. The terminal searches for a Bluetooth phone. When the search is complete, a list of discovered Bluetooth phones appears.

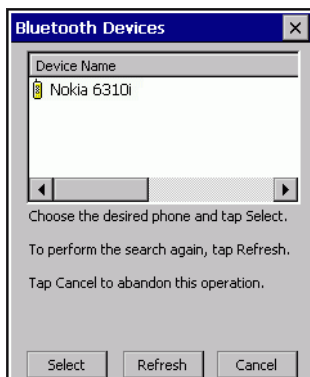


Figure 7-6. Get Connected! - Select Device Window

6. Select the phone to connect to and tap **Select**. A service discovery phase begins which lasts for about 5 to 10 seconds.
7. As prompted in the next window, prepare the phone for bonding. For instructions on setting the phone to “Bondable” or “Pairable” mode, refer to the phone’s user manual. Have the passkey ready, then tap **Next >**. The *Passkey Required* window appears.

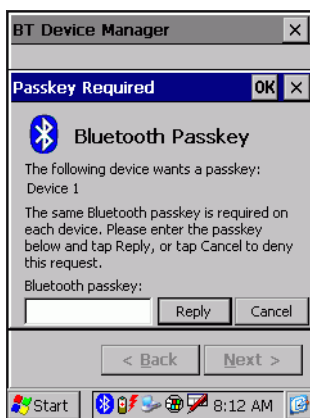
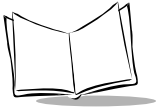


Figure 7-7. Enter Passkey Window



8. Enter the passkey. Tap **Reply**.
9. The phone may then either automatically accept the passkey or ask you to enter one. If prompted for a passkey, use the same one entered on the terminal.

Note: *Ericsson T68/T68i only: When the phone requests to bond, select 2: Add to paired devices. Do not tap ACCEPT.*

10. Tap **Finish**. After successfully connecting, the phone appears in the *Bluetooth Devices* folder. In the Today screen, the Bluetooth icon blinks.

Note: *You may also switch between different phones by assigning a new "favorite phone" in the Bluetooth Devices folder.*

Motorola Timeport 270C, Nokia 3650/6310/7650/8910/8910i

1. Tap the *Bluetooth* icon - *Get Connected!* The *Get Connected! Wizard* window appears.



Figure 7-8. Get Connected! Wizard Window

2. Tap **Next >**.



Figure 7-9. Select Your Phone Window

3. In the *My Bluetooth phone is* drop-down list, select a Bluetooth phone. The wizard provides tailored instructions based on the selection. Tap **Next >**.
4. The next window(s) vary and provide instructions for preparing the phone for Bluetooth connections. Some or all of the following may need to be performed:
 - Naming the Bluetooth phone.
 - Setting the Bluetooth phone in Discoverable mode.
 - Preparing a Bluetooth passkey.

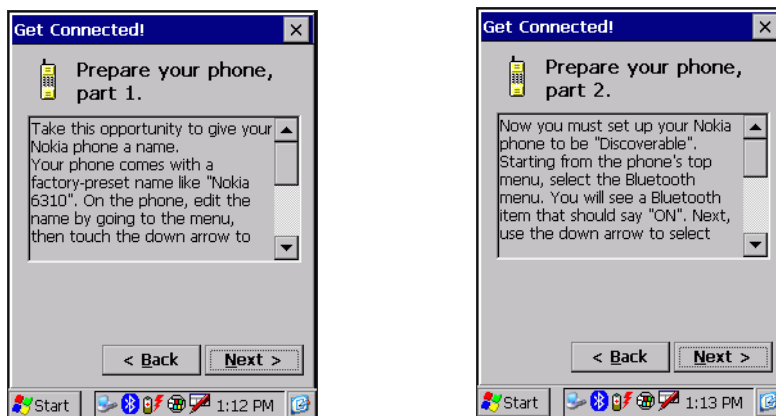


Figure 7-10. Get Connected! Wizard Windows



5. Read the instructions and perform the task on the phone. Tap **Next >**. The terminal searches for a Bluetooth phone. When the search is complete, a list of discovered Bluetooth phones appears.

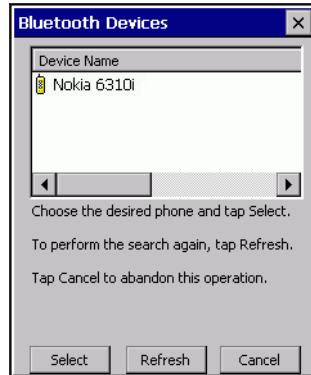


Figure 7-11. Get Connected! - Select Device Window

6. Select the phone to connect to and tap **Select**. A service discovery phase begins which lasts for about 5 to 10 seconds.
7. The next two screens describe procedures you can only complete after the wizard is completed. Read through each screen but do not complete the described procedures until you exit the wizard.
8. Continue to the last screen of the wizard and tap **Finish**. See *Bonding with Discovered Device(s)* on page 7-17 to complete the bonding process and, if desired, set up automatic connections.

Bluetooth Configuration

The terminal uses a Bluetooth radio to communicate with other Bluetooth enabled devices and must be set up properly to do so. This section provides instructions for setting up the terminal to enable, find and communicate with other devices.

Configuring the Terminal

To configure the PPT 8860:

1. Tap the *Bluetooth* icon - *Advanced Features* - *My Bluetooth Device*. The *Device Manager* window appears.

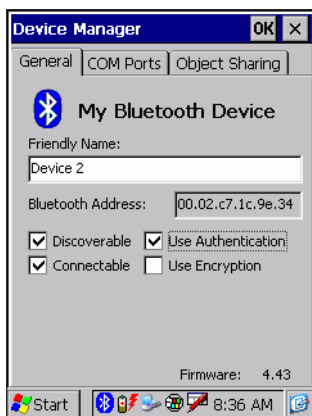
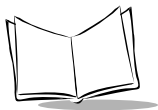


Figure 7-12. Device Manager - General Tab

2. In the *Friendly Name* field, enter a name for the terminal.

Note: *In normal phone connect operation, Discoverable mode is not needed and should be disabled. If you do enable Discoverable mode (e.g., for ActiveSync), note that it does not shut off by itself. To save power, disable it when not needed.*

3. Select the *Discoverable* checkbox to make the terminal discoverable by other Bluetooth devices.



Note: *Connectable, Use Authentication, and Use Encryption are also not required for printing or dial-up networking applications.*

4. Select the *Connectable* checkbox to enable other Bluetooth device to connect to the terminal.
5. Select the *Use Authentication* checkbox to enable other Bluetooth device to connect to the terminal.

Note: *Check Use Authentication to enable the Use Encryption option.*

6. Select the *Use Encryption* checkbox to enable other Bluetooth device to connect to the terminal.
7. Tap **OK**.

Assigning COM Ports

To communicate with Bluetooth phones, printers, APs, computers and FAXs, the appropriate COM ports must be enabled.

1. Tap *Bluetooth* icon - *Advanced Features* - *My Bluetooth Device*. The *Device Manager* window appears.

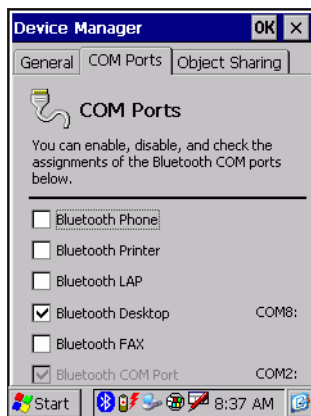


Figure 7-13. Device Manager - COM Ports

2. Tap the *COM Ports* tab.

Note: *The Bluetooth COM port cannot be disabled. To free COM ports, disable IrDA COM ports, see IrDA on page 3-23.*

3. As required, enable or disable the Bluetooth COM port assignments.
4. Tap **OK**.

Object Sharing

Use the *Object Sharing* tab to set the default directory for storing files to share with other devices.

1. Tap *Bluetooth icon - Advanced Features - My Bluetooth Device - Object Sharing* tab.

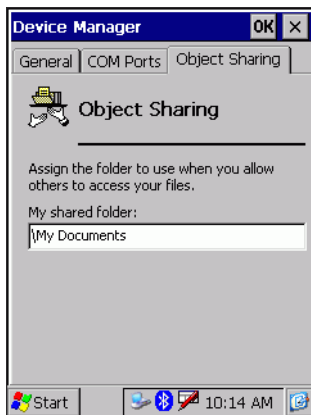


Figure 7-14. Device Manager - Object Sharing Tab

2. In the *My Shared Folder:* field, enter the directory where shared files reside. The directory path cannot end with “\”.
3. Tap **OK**.

Discovering Bluetooth Device(s)

Use the *Bluetooth Device Discovery* wizard to discover other Bluetooth devices nearby. The *Bluetooth Device Discovery* wizard is a more detailed alternative to using the *Bluetooth “Get Connected!” Wizard*, Bluetooth ActiveSync or Bluetooth LAN Access options.



1. Tap the *Bluetooth* icon - *Advanced Features* - *Bluetooth Devices*. The *Bluetooth Devices* window appears.

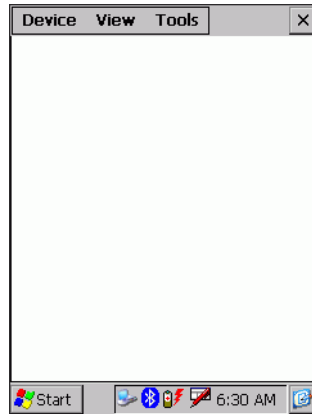


Figure 7-15. Bluetooth Devices Window

2. Select *Tools* - *Device Discovery*. The *Discovery* window appears.



Figure 7-16. Bluetooth Device Discovery Window

3. Tap **Next >**.

4. Select the device type to search for.

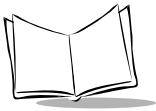


Figure 7-17. Select Bluetooth Device to Search For

5. Tap **Next >**.
6. The terminal searches for Bluetooth devices in the area.



Figure 7-18. Searching for Bluetooth Devices



7. When the search is complete, a window appears listing the discovered Bluetooth devices.

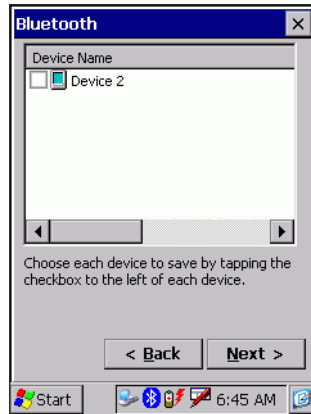


Figure 7-19. Discovered Bluetooth Devices

8. Select the checkbox next to the device(s).
9. Tap **Next >**.
10. A service discovery phase begins, which last about 5 to 10 seconds per chosen device. When completed the *Congratulations!* window appears.



Figure 7-20. Bluetooth Device Discovery Congratulations Window

11. Tap **Finish**.

Bonding with Discovered Device(s)

Follow these steps to bond with an already discovered Bluetooth device. In most cases, bonding is for establishing secure communications with a Bluetooth-enabled phone. This is a more detailed alternative to using the Bluetooth *Get Connected! Wizard*.

Caution

Do not bond with a Motorola Timeport 270C or Nokia 6310 phones.

Do not use this method to bond with a printer.

1. Tap the *Bluetooth* icon. Select *Advanced Features - Bluetooth Devices*.

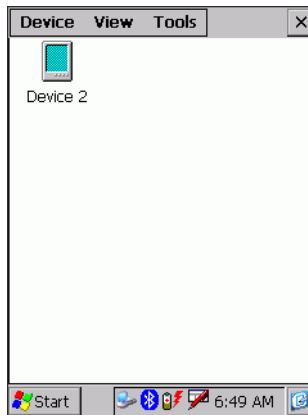
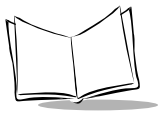


Figure 7-21. Bluetooth Devices Window

2. Tap the device icon.



3. Select *Device - Bond*. The *Bluetooth Device Bonding* window appears.



Figure 7-22. Bluetooth Bonding Window

4. Tap **Next >**.

Note: *Ensure that the Bluetooth device you want to bond with is in Bondable mode. Refer to the device's user documentation.*



Figure 7-23. BT Device Manager Window

5. Tap **Next >**.

6. If the remote device is set up to accept bonding, a Bluetooth *Passkey Required* window appears.



Figure 7-24. Password Required Window

7. In the *Bluetooth passkey:* field, enter the passkey.
8. Tap **Reply**.
9. If required, enter the passkey on the other Bluetooth device.
10. When you have successfully bonded with the other device, tap **Finish**.

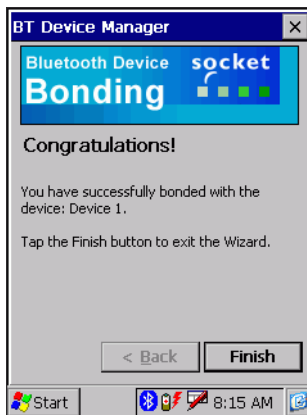
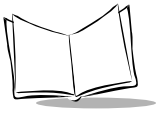


Figure 7-25. Bonding Complete Window

View Device Properties

To view the properties of an already discovered device:



1. Tap the *Bluetooth* icon - *Advanced Features* - *Bluetooth Devices*. The *Bluetooth Device* window appears.

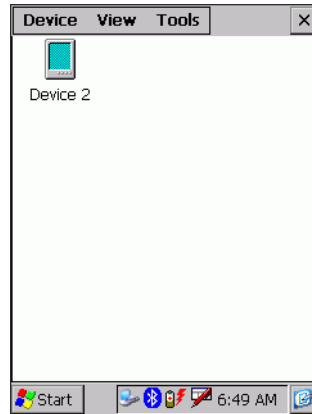


Figure 7-26. Bluetooth Device Window

2. Select a device.
3. Select *Device - Properties*. The *Bluetooth Devices Property* window appears.

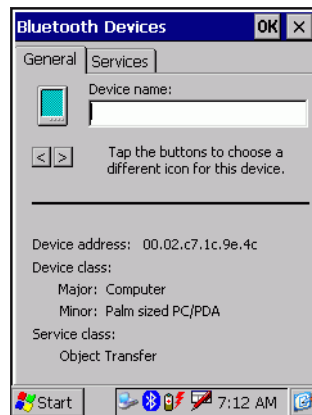


Figure 7-27. Bluetooth Devices Property Window

4. Use the *General* and *Services* tabs to view device properties.
5. If needed, assign a new device type icon by tapping on the arrow buttons in the *General* tab. You can also use the *Device name* field to rename the device. When done, tap **OK** for the setting to take effect.

Setting Up A Favorite Device

To set up default devices in the Bluetooth Devices folder:

1. Tap the *Bluetooth* icon - *Advanced Features* - *Bluetooth Devices*. The *Device Manager* appears.

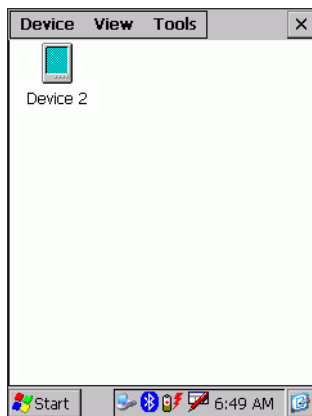
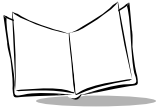


Figure 7-28. Device Manager

2. Select *Tools* - *My Favorites*. The *My Favorites* window appears.



Figure 7-29. My Favorites Window



Note: *Tabs appears only for COM ports you have enabled. To enable a port, see Assigning COM Ports on page 7-12.*

3. Tap the tab for the type of device you would like to set a favorite for. If needed, use the arrow buttons to scroll and find the tab you need.
4. To select a favorite device, select *Use the favorite selected above* radio button.
5. In the drop-down list, select your device.
6. Tap **OK**. After setting a device as your favorite, its icon appears in the *Bluetooth Devices* window with a heart next to it.

Change Views

To switch between the large icons or details views in the *Bluetooth Devices* window:

1. Tap the *Bluetooth* icon - *Advanced Features* - *Bluetooth Devices*.
2. Select *View*. Choose between *Large Icons* or *Details*.

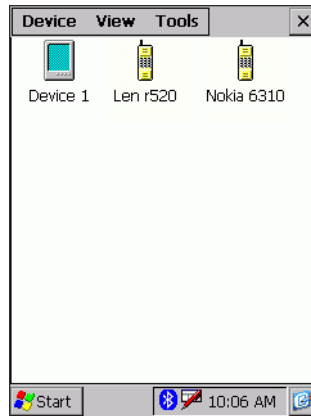


Figure 7-30. Large Icons View

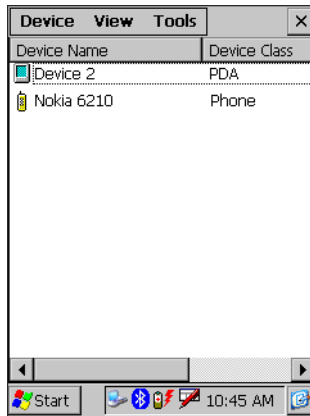
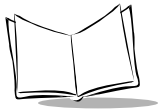


Figure 7-31. Details View

Note: *In Details view, scroll right to see the current Bonded status.*



Deleting a Device

If you no longer plan to connect with a device, delete it from the *Bluetooth Devices* window.

1. Tap the *Bluetooth* icon - *Advanced Features* - *Bluetooth Devices*. The *Bluetooth Device* window appears.

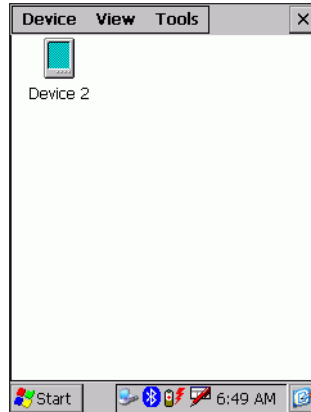


Figure 7-32. Bluetooth Device Window

2. Select the device to delete.
3. Select *Device - Delete*.
4. A Confirm dialog appears. Tap **Yes**.

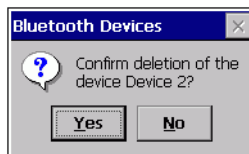


Figure 7-33. Delete Device Confirmation Dialog Box

Bluetooth Communications

Dial-up to Your Network

Complete the following steps to create a new Bluetooth connection. Before setting up dial-up networking, obtain dial-up information and other necessary settings for your office network or ISP.

1. Tap *Start - Settings - Control Panel* - double-tap *Network and Dial-up* icon. The *Connections* window appears.

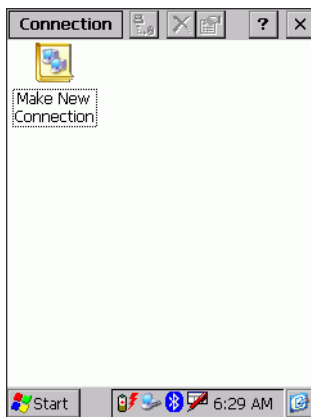


Figure 7-34. Connection Window



2. Tap *Connection - New* or double-tap the *Make New Connection* icon. The *Make New Connection* window appears.

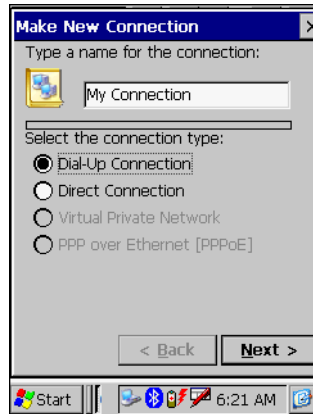


Figure 7-35. Make New Connection Window

3. In the *Type a name for the connection* field, enter a name.
4. Tap **Next >**.



Figure 7-36. Select a Modem Window

5. In the *Select a modem:* drop-down list, select *Bluetooth Phone*.

6. Tap **Configure**.

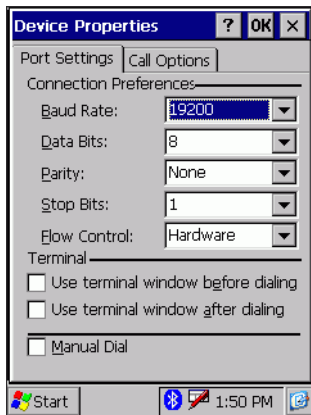


Figure 7-37. Device Properties - Port Settings Tab

7. In the *Baud Rate* drop-down list, select *115200*.
8. Tap *Call Options* tab.

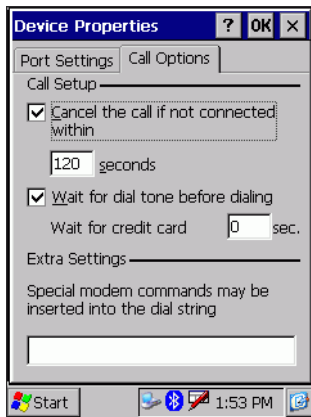
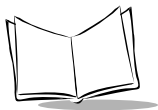


Figure 7-38. Device Properties - Call Options Tab

9. Uncheck *Wait for dial tone before dialing* checkbox.
10. Tap **OK**.



11. If required, tap **TCP/IP Settings** to enter any special network settings for your office network or ISP.

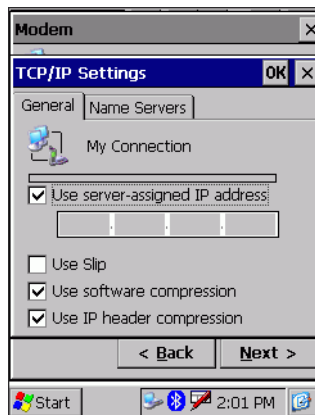


Figure 7-39. TCP/IP Settings Window

12. Tap **OK**.
13. Tap **NEXT >**.
14. Enter the dial-up number for your office network or ISP.
15. Tap **Finish**.

Note: *If you plan to travel or change area codes often, tap use dialing rules to configure different dialing locations.*

16. In the *Connections* window, double-tap the new Bluetooth connection icon. The *Dial-up Connection* window appears.



Figure 7-40. Dial-up Connection Window

17. Enter a *User name* and *Password*.
18. Tap **Connect**.
19. For Motorola Timeport 270C or Nokia 3650/6310/7650/8910/8910i phones:
 - a. After you tap **Connect** for the first time, the phone displays a message asking if you want to bond. On Motorola phones, enter *GRANT*; on Nokia phones, enter *ACCEPT*.
 - b. On the phone, enter a 4-16 digit passkey, then enter it on the terminal.
 - c. After successfully bonding with the phone, you may want to set up your phone to automatically bond with your terminal without requiring a passkey every time. This option is available with some Motorola and Nokia phones. See *Automatic Connection* on page 7-39.
20. To use a different Bluetooth phone for dial-up networking, you can use the same connection setup, but you must make the new phone your favorite. Run the *Get Connected! Wizard* again, select the new phone, and make it your new Favorite when prompted. Or you can use the Bluetooth Devices folder to change your favorite phone (see *Setting Up A Favorite Device* on page 7-21).



Bluetooth ActiveSync

This section explains how to use the Bluetooth ActiveSync option to quickly and easily ActiveSync to a Bluetooth enabled notebook or host computer with ActiveSync installed. The procedures vary depending upon if you:

- ActiveSync with a favorite computer
- ActiveSync with a discovered computer
- ActiveSync with an un-discovered computer.

Ensure that ActiveSync on the desktop is set to the proper com port. Determine what com port the Bluetooth device is set to on the desktop.

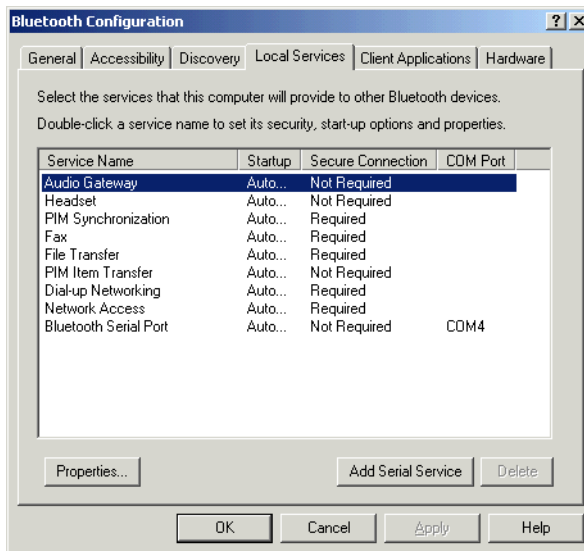


Figure 7-41. Sample Bluetooth Configuration Window

Set the com port in ActiveSync's *Connection Settings* window.

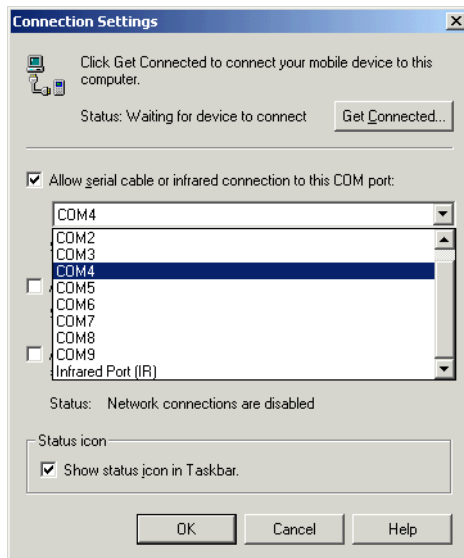


Figure 7-42. Connection Setting Window

ActiveSync with a Favorite Computer

To ActiveSync with a computer that the terminal discovered and is a favorite:

1. Tap *Bluetooth* icon - *Bluetooth ActiveSync*.
2. The terminal automatically tries to connect to the favorite computer.
3. The *Connect To* dialog appears, indicating that it is trying to connect to wireless ActiveSync.



Figure 7-43. Connecting to Host



4. After a successful connection is made, the dialog indicates Connected.



Figure 7-44. Connected to Host

5. Now you are ready to synchronize files.

ActiveSync with a Discovered Computer

To ActiveSync with a computer that the terminal discovered but is not a favorite:

1. Tap *Bluetooth* icon - *Bluetooth ActiveSync*. The *Bluetooth Devices* window appears.

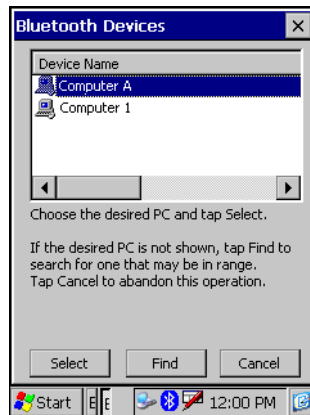


Figure 7-45. Bluetooth Devices Window

2. Choose a computer from the list and tap **Select**, or tap **Find** to search for another computer.

3. The terminal attempts to connect to the selected host computer.



Figure 7-46. Connecting to Host

4. After a successful connection is made, the status dialog indicates Connected.



Figure 7-47. Connected to Host

5. Now you are ready to synchronize files.

ActiveSync with Undiscovered Computer

To ActiveSync with a computer that the terminal has not discovered:



1. Tap **Bluetooth** icon - **Bluetooth ActiveSync**. A Bluetooth device search automatically begins.



Figure 7-48. Searching for Bluetooth Devices

2. Choose a computer from the list and tap **Select**. If the computer is not listed, make sure the computer is discoverable and tap **Refresh** to search again.

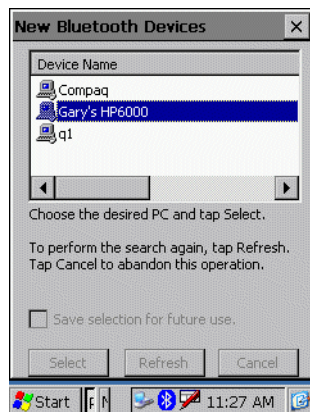


Figure 7-49. Select ActiveSync Device

3. The service discovery phase begins.

4. The terminal attempts to connect to the selected host computer.



Figure 7-50. Connecting to Host

5. After a successful connection is made, the status dialog indicates Connected.



Figure 7-51. Connected to Host

6. Now you are ready to synchronize files.



Bluetooth LAN Access

This section explains how to use the Bluetooth LAN access feature to quickly and easily connect to a Bluetooth-enabled LAN access point. The procedures vary depending upon if you:

- Connect with a favorite AP
- Connect with a discovered AP
- Connect with an un-discovered AP.

Connecting to a Favorite Access Point

To communicate with a favorite AP:

1. Tap the *Bluetooth* icon - *Bluetooth LAN Access*. A screen appears that allows you to choose which AP to connect to in your *Bluetooth Devices* folder.



2. Choose an AP from the list and tap **Select**.
3. If you would like to save the new AP to your *Bluetooth Devices* manager, check *Save selection for future use*.

Note: *If your AP is not listed, tap **Find** and follow the instructions provided in Connecting to an Undiscovered Access Point on page 7-38.*

4. Your terminal tries to connect to the selected AP.

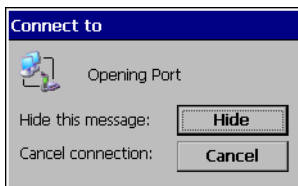


Figure 7-52. Connecting to LAN

5. If your LAN requires a passkey, a screen appears, asking for the passkey. Enter the passkey, then tap **OK**.
6. After a successful connection is made, the dialog box indicated Connected.



Figure 7-53. Connected to LAN

7. You are now ready to access your LAN for Internet and file access.

Connecting to a Discovered Access Point

To communicate with an AP that the terminal discovered but is not a favorite:

1. Tap the *Bluetooth* icon - *Bluetooth LAN Access*.
2. The terminal tries to connect automatically to the favorite AP.

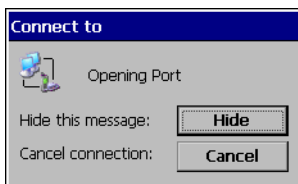
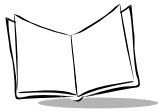


Figure 7-54. Connecting to Favorite LAN

3. A screen appears that allows you to choose which AP to connect to in your *Bluetooth Devices* folder.



4. If your LAN requires a passkey, a screen appears, asking for the passkey. Enter the passkey, then tap **OK**.
5. After a successful connection is made, the dialog box indicated Connected.

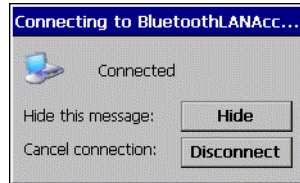


Figure 7-55. Connected to LAN

6. You are now ready to access your LAN for Internet and file access.

Connecting to an Undiscovered Access Point

To connect to an AP that the terminal has not discovered:

1. Tap the *Bluetooth* icon - *Bluetooth LAN Access*.
2. The terminal automatically searches for new Bluetooth devices.

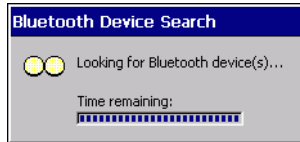


Figure 7-56. Searching for Bluetooth Devices

3. After the search is complete, select the AP you wish to connect to.

4. Tap **Select**. If the AP is not listed, tap **Refresh** to search again.

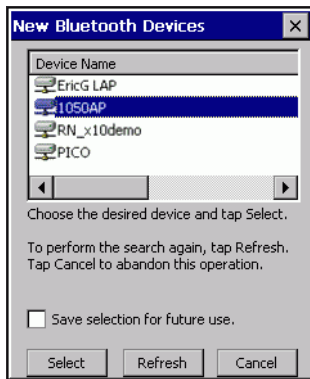
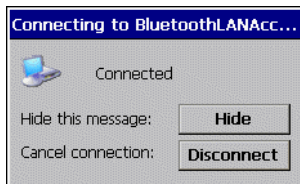


Figure 7-57. New Bluetooth Devices Window

5. A service discovery phase begins.
6. If the LAN requires a Passkey, a screen appears, asking for the Passkey. Enter the passkey, then tap **OK**.
7. After a successful connection is made, the screen indicates Connected.

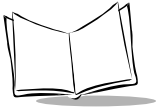


8. Now you are ready to access your LAN for Internet access, files, etc.

Automatic Connection

Some Bluetooth enabled phones let you set up automatic connections with devices they have successfully bonded with, without requiring you to manually enter a password every time you try to connect. To set up automatic connections between your phone and your terminal, follow the appropriate instructions below for your specific phone.

1. Motorola Timeport 270C:
 - a. On the phone, press MENU.
 - b. Scroll to *Settings*, then press SELECT.
 - c. Scroll to *Connection*, then press ON.



- d. On *Bluetooth Link*, press SELECT.
- e. Scroll to *Devices*, then press SELECT.
- f. Choose your terminal, then press EDIT.
- g. Scroll to *Access:Ask*, then press CHANGE.
- h. Scroll to *Automatic*, then press SELECT. Press DONE.
2. Nokia 3650/7650:
 - a. On the phone, press MENU.
 - b. Scroll to *Connectivity*, then press Options.
 - c. The *Open* option should be highlighted. Press Select.
 - d. The *Bluetooth* option should be highlighted. Press Options.
 - e. The *Open* option should be highlighted. Press Select.
 - f. Scroll to the right tab to access the Paired devices list. Highlight your terminal, then press Options.
 - g. Scroll to *Set as authorised*, then press Select.
 - h. In the confirmation screen, press Yes.
3. Nokia 6310/8910/8910i:
 - a. On the phone, press MENU.
 - b. Scroll to *10 Bluetooth*, then press SELECT.
 - c. Scroll to *4 View Paired Devices*, then press SELECT.
 - d. Highlight the *Pocket PC*, then press OPTIONS.
 - e. Scroll to *3 Request Connection Authorization*, then press NO.

Socket OBEX

This section explains how to use the Socket object exchange (OBEX) application to trade files with another Bluetooth device that supports OBEX.

The OBEX application supports:

- sending a file
- browsing remote devices
- receiving a file
- enabling file sharing.

The first two operations are client-oriented and involve initiating an object exchange. The last two operations are server-oriented and involve accepting objects in an exchange initiated by another Bluetooth device.

Sending a File

To send a file to another Bluetooth device:

1. Ensure the other Bluetooth device is set up to receive a file. It must support the OBEX Object Push server profile. Refer to the documentation that came with the device for instructions.
2. Tap the *Bluetooth* icon - *Transfer via Bluetooth* - *Send a File*.
3. If the terminal has no devices in the *Bluetooth Devices* folder, it searches for Bluetooth devices nearby.
4. Select the Bluetooth device you wish to send a file and tap **Select**. If the desired device is not listed, tap **Find**. The *Select File* dialog box appears.

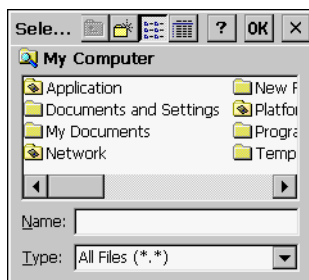
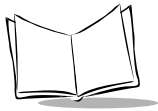


Figure 7-58. Select File Dialog Box



5. Navigate to the location where the file is located.
6. Tap the file you wish to send.
7. Tap **OK**.
8. The terminal sends the file to the other Bluetooth device.

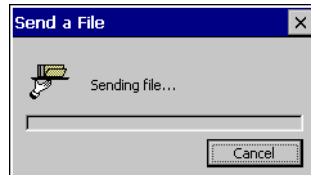


Figure 7-59. Sending a File

Browse Remote Device

The Bluetooth *File Explorer* enables the terminal to share files with another Bluetooth device. The other device must support the OBEX File Transfer server profile.

This section covers the following file transfer operations:

- Prepare for file transfer
- Send/receive file(s) or folder(s)
- Create a folder
- Delete file(s) or folder(s)
- Refresh remote view
- Connect/disconnect
- Exit the program.

Note: *“Local device” refers to the terminal you are running the Socket OBEX from. “Remote device” refers to the Bluetooth device you are trying to transfer files with.*

Prepare for File Transfer

1. Ensure the remote device has file sharing enabled. It must support the OBEX File Transfer server profile.
2. Tap the *Bluetooth icon - Transfer via Bluetooth - Browse Remote Device*.

3. If the terminal has no devices in the *Bluetooth Devices* folder that supports OBEX File Transfer, then it begins to search for Bluetooth devices nearby.
4. Select the Bluetooth device you wish to browse and tap **Select**. If the desired device is not listed, tap **Find**.



5. The terminal begins to establish a file sharing connection.
6. After the devices successfully connect, the *Bluetooth File Explorer* appears.

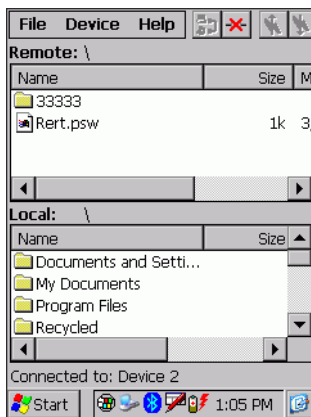
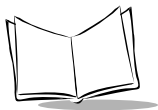


Figure 7-60. Bluetooth File Explorer Window

7. Half of the window shows contents of the remote device, while the other half shows contents of your terminal (the local device). The very bottom of the window displays the connection status.



Note: A copy of the selected items will be transferred, not the original.

Send/Receive File or Folder

Select the file or folder that you wish to transfer. You can only select items from one device per transfer session.

1. Tap items to select them for transfer.
2. Double-tap a folder to open it.
3. There are two different ways to initiate the transfer.
 - a. Select *File - Send to remote* or *Get from remote*, as applicable. The inappropriate option should be gray.
 - b. Tap the *Send to remote* icon or *Get from remote* icon, as applicable. The inappropriate icon should be gray.
4. A dialog box reports the status of the transfer.
5. After the transfer, a copy of each selected item appears in the other device.

Create a Folder

To create a folder:

1. Select *File - Remote device* or *Local device*.

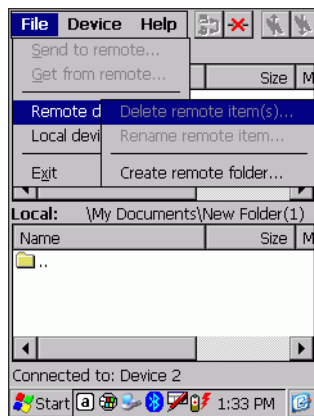


Figure 7-61. Create Folder

2. Select *Create remote folder* or *Create local folder*, as applicable.

3. Enter a name for the new folder.

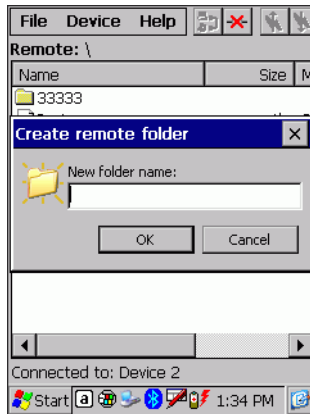


Figure 7-62. Create New Folder

4. Tap **OK**.

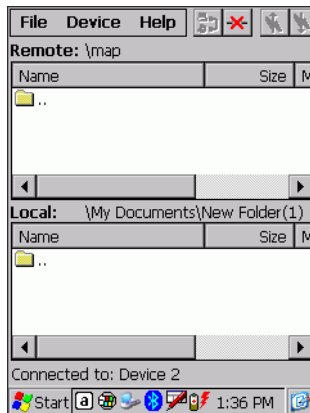
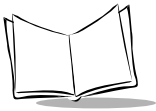


Figure 7-63. New Folder in File Explorer

5. The new folder should be listed under the appropriate device.

Delete a File or Folder

To delete a file or folder:



1. Select item(s) that you wish to delete. You can only delete item(s) from one device at a time.
2. Select *File - Remote device* or *Local device*, wherever the item(s) are located, then select *Delete remote item(s)* or *Delete local item(s)*, as applicable.

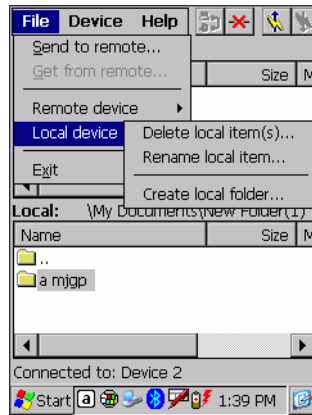


Figure 7-64. Delete a File or Folder

3. In the Confirm dialog, tap **Yes**.

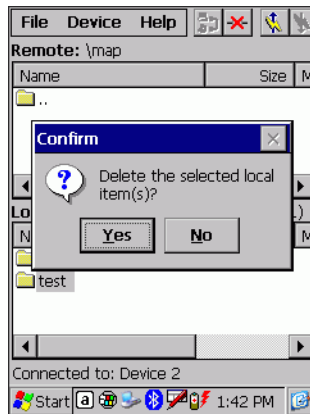
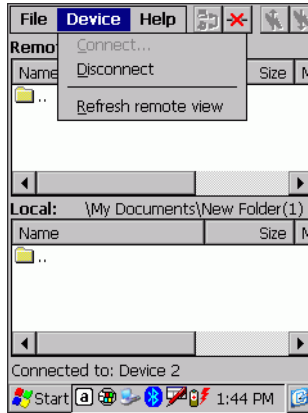


Figure 7-65. Confirm File or Folder Deletion

Refresh Remote View

1. Select the *Device - Refresh remote view*.



2. Your local device reads the contents of the remote device.
3. After a few seconds, the view of the contents of the remote device refreshes.

Connecting or Disconnecting to a Remote Device

To connect to the remote device:

1. Ensure the remote device has file sharing enabled.
2. Select *Device - Select Connect* or tap the *Connect* icon.

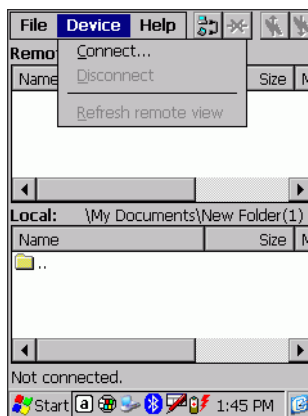
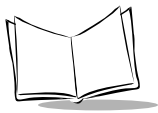


Figure 7-66. Connecting to a Remote Device



3. Select the device to connect to. Tap **Select**. The terminal attempts to connect to the selected device.

To disconnect from the remote device:

1. Select *Device - Disconnect* or tap the *Disconnect* icon.

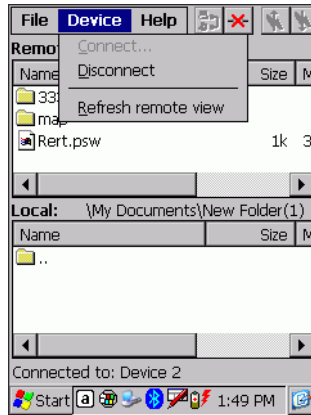


Figure 7-67. Disconnecting from a Remote Device

2. The terminal disconnects from the remote device. No contents is listed in the remote device area.

Exit Bluetooth File Explorer

To exit the *Bluetooth File Explorer*, select *File - Exit*.

Receiving a File or Contact

Note: To view a contact from another device a 3rd party business card viewer application is required.

To receive a file or contact from another Bluetooth device:

1. Tap the *Bluetooth* icon - *Transfer via Bluetooth - Receive Contact or File*.
2. The *Receive Contact* or *Receive File* status screen appears. Your mobile computer waits two minutes for the contact or file.
3. After successfully connecting to the remote device, the status screen indicates that it is connected then disappears after the file is transferred. The new contact or file

is saved in the directory specified in the *Object Sharing* tab (see *Object Sharing* on page 7-13).

4. If two minutes passes before you receive the file, tap **Wait Again**.

Enable File Sharing

To enable file sharing:

1. Tap the *Bluetooth* icon - *Transfer via Bluetooth* - *Enable File Sharing*. The *Enable File Sharing* status screen appears.

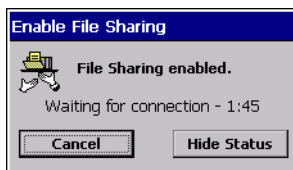


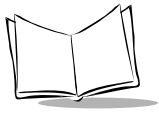
Figure 7-68. Enable File Sharing Window

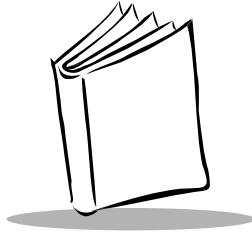
2. The terminal waits two minutes for the remote device to connect.
3. After successfully connecting to the remote device, the screen reports *Connected*.
4. If two minutes passes before you connect, tap **Wait Again**.
5. File sharing is enabled until you tap **Cancel**.

Bluetooth Printing

Printing to a Bluetooth printer requires a print-enabled application to be installed on the terminal. To print to a printer:

1. Ensure that the terminal's COM port for printing is enabled. See *Assigning COM Ports* on page 7-12.
2. Ensure that a Bluetooth printer has been discovered. See *Discovering Bluetooth Device(s)* on page 7-13.
3. Set the printer as the terminal's default printer. See *Setting Up A Favorite Device* on page 7-21.
4. Open a printer application and print.



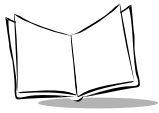


Chapter 8

Software Installation on Development PC

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Introduction

To develop applications to run on the PPT 8800, the *Symbol Windows CE SDK for PPT 8800* is available. This SDK contains PPT 8800-specific software not available in the standard Microsoft® Windows® CE Platform SDK.

The minimum system configuration required to install the SDK is:

- IBM-compatible host computer with Pentium 150 MHz processor or higher
- Microsoft Windows XP, Microsoft Windows 2000 or Windows NT 4.0 with Service Pack 6 or higher. operating system
- 32 MB RAM
- 100 MB available hard disk space
- CD-ROM drive
- One available serial port
- Mouse.

Also, ensure the drive you are installing to accepts long filenames (larger than the 8.3 filename convention).

Before You Install the SDK

Before you install the Symbol Windows CE SDK for PPT 8800, install the following tools:

- Microsoft eMbedded Visual Tools 4.0
- Microsoft ActiveSync version 3.5 or higher
- Adobe® Acrobat® Reader® 3.0 or higher.

Symbol Windows CE SDK

The SDK installation program loads the required Windows CE components on the development PC used to create the image files (via Terminal Configuration Manager) for download to the terminal.

The Symbol SDK includes:

- Symbol-provided files
- Printer drivers
- TCM scripts
- Sample code.



Installing the SDK on the Development PC

The Symbol SDK installs through Windows in the directory C:\SYMBOL WINDOWS CE SDK, and also installs files in the Windows CE Tools directory (generated by the CE Tool Kit).

Installing the SDK

Install the SDK from the Symbol Web site www.symbol.com. Follow the installation prompts.

Once installation of the SDK is complete, use eMbedded Visual C++ or eMbedded Visual Basic to view the active Windows CE configuration, Microsoft Pocket PC, and display the directory in which the SDK is installed.

Installing Other Development Software

Developing applications for the PPT 8800 may require installing other development software such as application development environments on the development PC. Follow the installation instructions provided with this software.

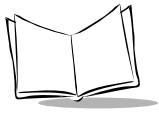


Chapter 9

Configuring the Terminal

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Introduction

This chapter describes the Terminal Configuration Manager (TCM), and how it is used to specify and load files into the flash memory of the terminal using the terminal's Initial Program Loader (IPL).

In TCM, you create a *script* that contains the information (commands to copy files) for building the image. TCM works with directory windows, which display the directory structure of your script and the source directories, files, and scripts from which you pull components. You can open multiple scripts, drag and drop items from a drive/directory to the script, rename and delete files in the script, etc. Upon building the image, TCM adds all the files, directories, and scripts referenced in the script to the image.

The SDK includes a number of standard scripts and demos/samples for you to use as a base for creating your own scripts. These scripts can be found in the SYMSDK\TCMScripts directory.

Note: *Before you create a script to build a hex image, identify the files required (system files, drivers, applications, etc.) and locate the files' source directories to make the script building process easier.*

The required processes for building a hex image in TCM include:

- Starting TCM
- Defining script properties
- Creating or modifying a script
- Building the hex image
- Sending the hex image.



Starting Terminal Configuration Manager

To start TCM, double click on the TCM icon in the SYMSDK group. The following window appears, displaying two directory windows; Script1 and File Explorer.

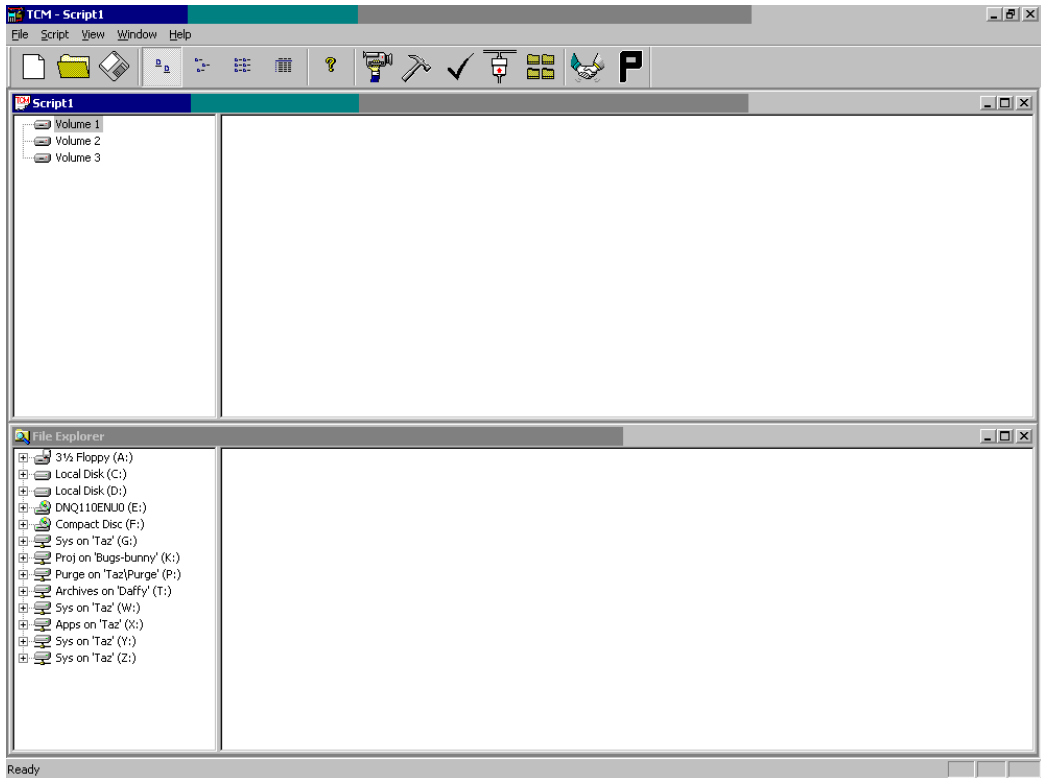

















Figure 9-1. TCM Window

Each directory window is split; the left half (or *pane*) of the window displays the directory tree for the current drive, and the right half displays the directory contents for the current drive.

The following table lists the components of the TCM start-up window.

Table 9-1. TCM Window Components

Component	Description			
Script Window	<p>Associated with a script file containing the information to create a Flash Disk image. This window is the <i>target</i> window, or the primary TCM window in which you can create a script or change a script file's contents by copying, deleting, and renaming files and directories. More than one script window can be open at a time.</p> <p>The Script Window consists of two panes, the Directory Tree Pane on the left and the Directory Contents Pane on the right. Subordinate directories and files of each volume are listed in the Directory Contents Pane.</p>			
File Explorer	A <i>read-only source</i> window for files and/or directories to include in the script being built.			
Tool Bar	Contains the tools, illustrated below, for taking action on a script.			
		Create a new script file.		Check script for existing files.
		Open a script file.		Select the hex image to load.
		Save a script file.		Tile windows.
		View script properties.		Build and send the hex image to the terminal.
		Build a script.		Preferences.
		View large icons.		About TCM.
		View small icons.		View list.
		View details.		




Defining Script Properties

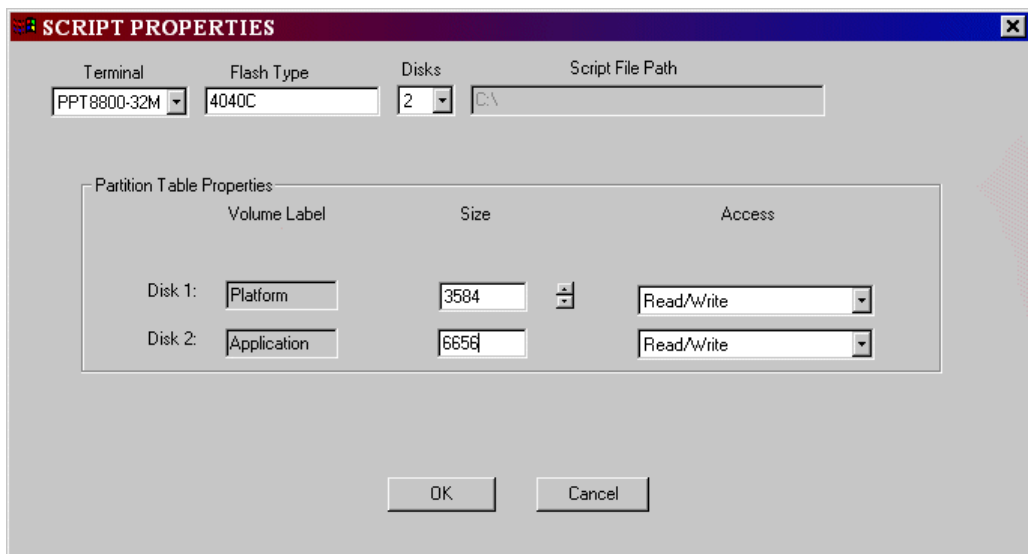
Before a script is created, the script properties must be defined. This defines the type of terminal, flash type, number of disks being created, and the memory configuration of each disk volume.

To define the script properties:

1. With TCM open, click on the Script Window to make it the active window.
2. Under the *Script* menu, select the *Properties* option.

OR

Click on  from the tool bar. The *SCRIPT PROPERTIES* window displays.



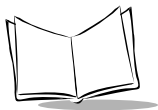
Partition Table Properties			
	Volume Label	Size	Access
Disk 1:	Platform	3584	Read/Write
Disk 2:	Application	6656	Read/Write

Figure 9-2. Script Properties Window

3. From the *Terminal* drop-down list, select PPT8800-32M.
4. From the *Disks* drop-down list, select the number of disk volumes to be created.

Note: *The options available under the disks drop-down list changes depending on the flash type. Some flash types only have one option for the number of disk volumes, others have two options.*

5. If you have selected three volumes under the *Disk* drop-down list, you have the option to change the memory configuration of the second and third volumes. To do so, click on the up or down arrow for either of the volumes, until the memory configuration of each is set to the desired value. You will notice that as you change the values for one of the volumes, the other volume is automatically changed accordingly.
6. For each disk volume, determine the Read/Write access option. The Script File Path displays the path of the selected script file.
7. Click the **OK** button to complete the settings.



Creating the Script for the Hex Image

On start-up, TCM displays the window shown on page 9-4, with the *Script1* window and *File Explorer* window.

The *Script1* window directory pane displays three volumes: Volume1, Volume2, and Volume3. Depending on the type of flash chip you have, the number of volumes may change. Files can be added to each of the volumes. With TCM, you can:

- create a new script file or open an existing script
- drag and drop existing files and directories to that script
- save the script.

Each process is described in the sections that follow.

Opening a New or Existing Script

Scripts are created in the *Script* window. To open a new script:

- From the *File* menu, choose *New*,


OR

- Click on  from the tool bar.

To open an existing script (e.g., a standard script provided in the SDK):

- From the *File* menu, choose *Open*. Navigate to the Symbol Windows CE SDK(*PPT8800*)\SymbolPlatforms\PPT88xx\TCMScripts directory and select the script file name

OR

- Click on  from the toolbar. Navigate to the Symbol Windows CE SDK(*PPT8800*)\SymbolPlatforms\PPT88xx\TCMScripts directory and select the script file name

OR

- Double click on an existing script in the Script Browser window.

Copying Components to the Script

To copy files or directories to the script being generated:

1. Click on the *File Explorer* window to make it the active window.
2. Click on the source directory in the Directory Tree Pane. TCM displays the directory contents in the Contents Pane.
3. Click on the file(s) and/or directory in *File Explorer*.

Note: *Optionally, use the standard Windows Shift+Left-click and Control+Left-click features to select multiple files and directories.*

4. Drag and drop the selected file(s) and/or directory from File Explorer to the target directory in the Script window

OR

Click on the target directory and select the File Explorer Copy icon from the toolbar.

Saving the Script

To save the changes to a new script:


1. From the *File* menu, choose *Save As*
- OR

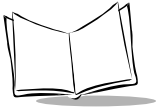
Click on  from the toolbar.

2. Enter the path and filename. TCM appends a .TCM extension to the script.
3. Click the **OK** button.

Note: *If you save an untitled script, TCM, by default, saves the script to the directory to which the Script Browser is pointing.*

To save changes to an existing script:

- From the *File* menu, choose *Save*, OR
- On the toolbar, click  .



Note: *If you open and make changes to an existing script, saving the changes writes over the existing script. If you wish to use an original or Symbol-supplied standard script as a base and save the changes in a new script, use Save As instead of Save after making the changes, and save to a different filename.*

Building the Image


As part of the build, TCM performs a check on the script which verifies that all files referenced in the script exist. If the image is bootable, TCM verifies that the boot files are available.

Note: *Performing a check is more important for previously existing scripts to ensure that files referenced in the script are still in the designated locations.*

To check a script:

1. In the *Script* window, select the script.
2. Save the script, if not already saved.
3. From the *Script* menu, choose *Check*,

OR

Click on  from the toolbar.

4. TCM verifies that files referenced in the script exist on available drives and lists an error message in the Errors found box for any missing files.
5. Choose the **OK** button to exit.

To build a script:

1. In the *Script* window, select the script to be built.
2. From the *Script* menu, choose *Build*,

OR

Click on  from the toolbar. The *Configure Build* window appears.

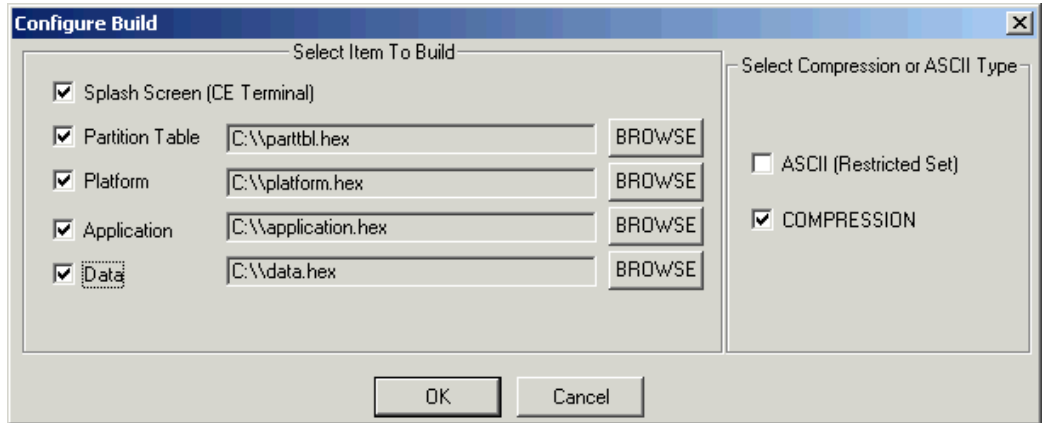


Figure 9-3. Configure Build Window

3. Click a checkbox to select the item to build.
4. Use the **BROWSE** button to locate the file.
5. Select ASCII format for your hex image, or COMPRESSION, which reduces the size of most hex images in order to speed downloading.
6. Click **OK**.
7. TCM performs a check. If the script has no errors, TCM proceeds with the build.

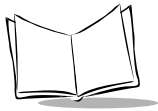
If the Build Fails

If the build fails, TCM displays a message indicating which file(s) are missing.

If the total amount of flash required by the script exceeds the image size, a TCM error results. To correct this, reduce the number of files in the volume, or make the disk non-bootable. Refer to [Defining Script Properties](#) on page 9-6 for more information on setting the image size appropriately.

Sending the Hex Image

Once the hex file is built, you are ready to download it to the terminal. A Hex image download requires both TCM and a program loader stored on the terminal. The terminal comes with a program loading utility, Initial Program Loader (IPL), stored in the terminal's



write-protected flash. To run IPL, the terminal must be inserted in a cradle or connected to a development PC by direct serial connection.

Connecting the Terminal and Development PC

To send the hex file to the terminal, first link the terminal and development PC by one of the following devices:

- Serial Charging Cable (p/n 25-38383-01)
- Single-Slot Serial Cradle (p/n CRD8800-1000S)
- Four-Slot Serial Charging Cradle (p/n CRD8800-4000S).

Set Up IPL to Receive the File

To set up IPL on the terminal to receive the files being downloaded via TCM:

1. Hard reset the terminal and replace the back cover. See *Performing a Hard Reset* on page 2-15.
2. On the 6-key Standard keypad, simultaneously press and hold the **F1** and the **F4** keys then press and release the Power button.

On the 15-key keypad, simultaneously press and hold the down arrow key and the **1** key then press and release the Power button.

3. Continue to hold down the keys until the IPL screen appears.

4. IPL displays the Baud Rate menu which lists the available baud rates for the serial connection.

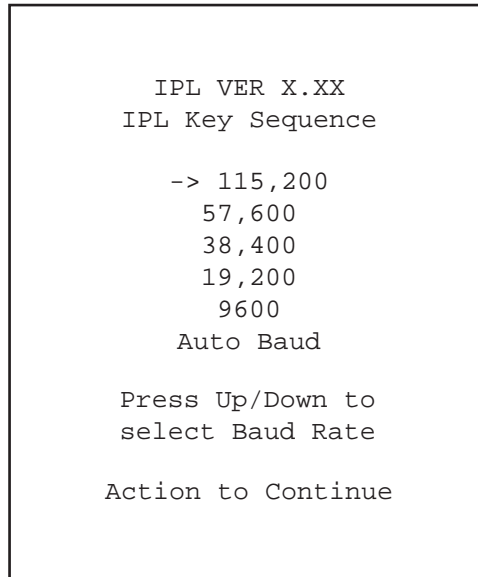
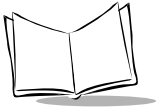


Figure 9-4. Baud Rate Menu

Note: *If the platform application or data partition sizes are changed, you must download a new partition table before selecting a baud rate.*

5. Use the Up and Down Scroll buttons to select the appropriate baud rate, then press the Enter button.
Auto Select is the default, and is selected if no other selection is made within 10 seconds.



6. The IPL Main Menu lists the partitions and/or applications that can be downloaded.

```
IPL VER X.XX
IPL Key Sequence

Windows CE
Platform
Application
Splash Screen
IPL
Partition Table
Auto Select

Press Up/Down to
select partition

Press Enter to
begin download
```

Figure 9-5. IPL Main Menu

Note: *If the platform application or data partition sizes are changed, you must download a new partition table before selecting a partition.*

7. Use the up and down scroll buttons to select the partition to be received, then press the Enter button.

When downloading more than one hex file, it is recommended that they be downloaded in the following order:

- Partition Table
- Splash Screen
- Application partition
- Platform partition
- Operating system
- IPL.

Auto Select is the default, and is selected if no other selection is made within 10 seconds.

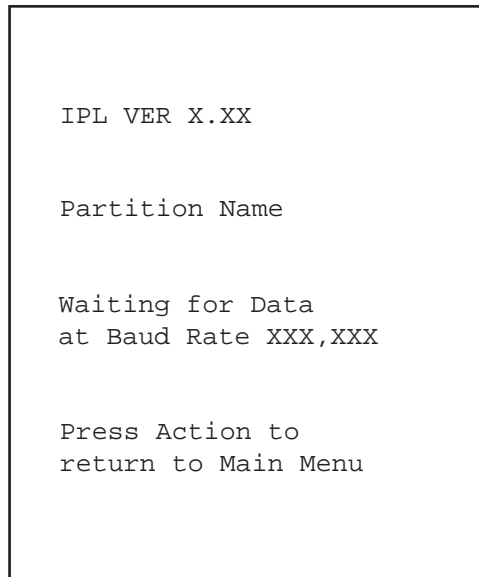


Figure 9-6. Waiting for Data

- Partition Name reflects the selection made in step 7.
- Baud Rate XXX,XXX displays the selection chosen from the Baud Rate Menu in step 5.
- This screen continues to display until the first character of the image to be downloaded is received from the host.
- While this screen is displayed, pressing the Enter button returns the IPL to the Main Menu.

Beginning the Send in TCM

On the development PC:



1. Open the *ActiveSync Connection Settings* window and ensure that the *Allow serial cable or infrared connection to this COM port* checkbox is disabled.

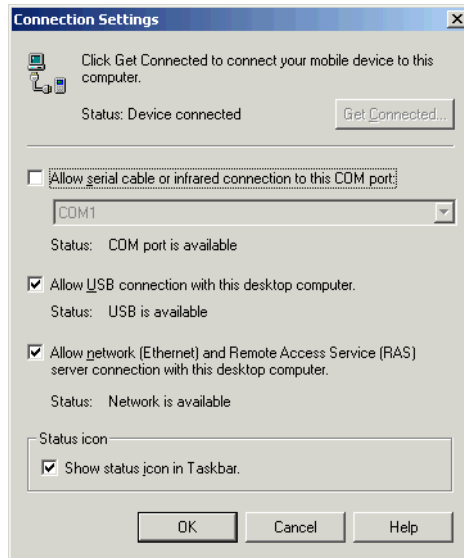


Figure 9-7. ActiveSync Connection Settings Window

2. In TCM, select the script.
3. From the *File* menu, choose *Load Terminal*

OR

Click on  from the toolbar. The *Load Terminal Dialog* window appears.

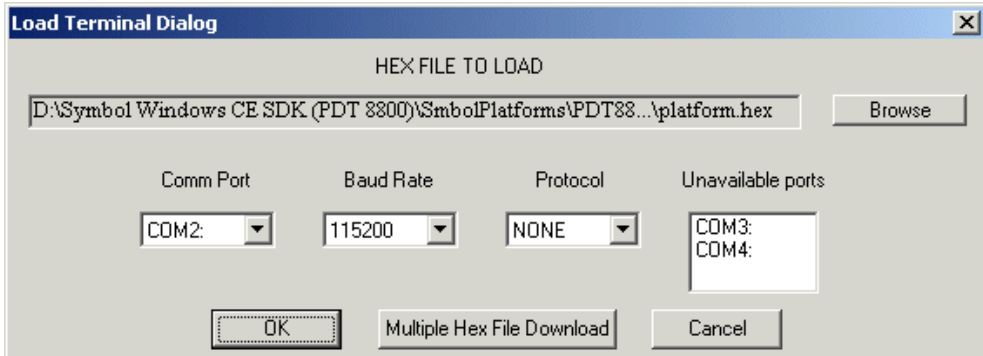
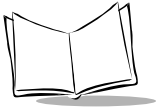


Figure 9-8. Load Terminal Dialog Window

4. If the correct Hex file is not displayed in the *HEX FILE TO LOAD* field, click the **Browse** button and navigate to the correct Hex file to be downloaded and click **OK**.
When downloading more than one hex file, it is recommended that they be downloaded in the following order:
 - Partition Table
 - Splash Screen
 - Application partition
 - Platform partition
 - Operating system
 - IPL.
5. From the *Comm Port* drop-down list, select the COM port being used. Ports already in use display in the *Unavailable ports* field.
6. From the *Baud Rate* drop-down list, select the appropriate baud rate. Your options are 2400, 4800, 9600, 19200, 38400, 57600, 115200.
7. From the *Protocol* drop-down list, select *NONE*.
8. Insert the terminal in a cradle, or connect it to a development PC with a serial cable.
9. Click **OK** to load the file.
10. Repeat steps 2 through 9 for each hex file.



On the terminal:

1. As soon as the first character of data is received, IPL displays the Receiving screen.

```
IPL VER X.XX

Partition Name
Downloading Data

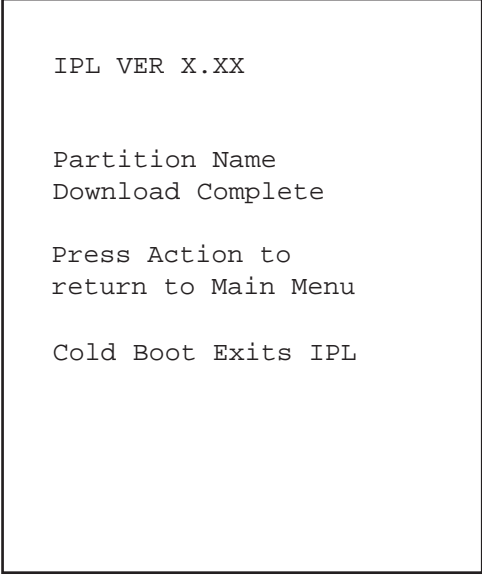
Processing XXXXX KB
of YYYYY KB image
```

Figure 9-9. Downloading Data

Note: *If the partition being downloaded was set to first erase the flash, the message “Pre-Erasing Flash” first appears before downloading begins.*

This screen indicates that the area selected in the Main Menu is currently downloading and displays until an entire image is received, or until an error is detected. As more data is received, the Receiving screen is updated to reflect the current status.

2. When the entire image is received, IPL displays the following screen to indicate that the download is complete:



```
IPL VER X.XX

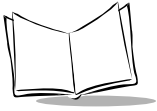
Partition Name
Download Complete

Press Action to
return to Main Menu

Cold Boot Exits IPL
```

Figure 9-10. Download Complete

- If Auto Select was selected on the Main Menu, the text “Auto Select Enabled” appears in place of “Cold Boot Exits IPL.”
 - If Auto Select was selected on the Main Menu, IPL immediately returns to the Waiting for Data screen to wait for the next image.
 - If any other selection was made on the Main Menu, IPL stays at the Success screen until you press the ENTER button. Once the screen is acknowledged, IPL returns to the Main Menu to wait for a new selection.
3. Hard reset the terminal (see *Performing a Hard Reset* on page 2-15) when all partitions are downloaded successfully.
 4. On the development PC, exit TCM by selecting *File - Exit*.



Error Messages

IPL Error Detection

While receiving data, IPL performs many checks on the data to ensure that the data is received correctly. If an error is detected, IPL immediately aborts the download, and reports the error on the terminal.

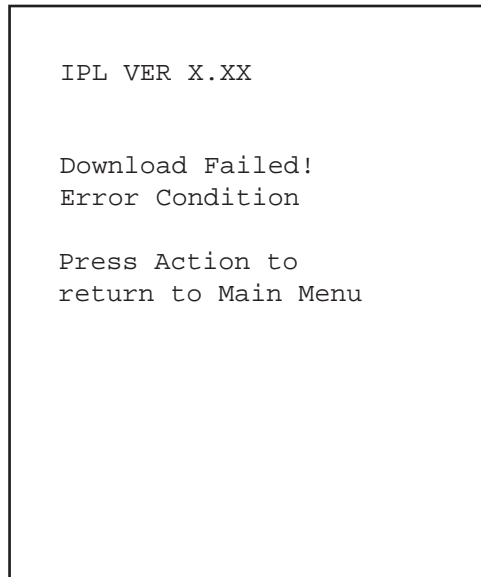


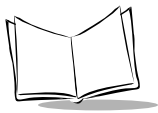
Figure 9-11. IPL Error Message

This screen displays until you press Enter. Once the screen is acknowledged, IPL returns to the Main Menu screen to wait for a new selection.

The cause of the error displays under the *Download Failed!* indication. The errors that can be reported, and the probable cause of the error, are described in [Table 9-2](#).

Table 9-2. IPL Error Messages

Error	Description
Invalid Image	This error occurs if another record is received before the Header Record. Ensure the Header Record is the first record downloaded.
Partition Not Defined	The destination code is a part of the Header record and is used as an index into the partition table. The partition table entry located at this index contains partition information for the data downloaded. If the Auto Select option is selected, a check is made to ensure that valid partition information exists in the partition table at this index. The check verifies that the Area Name and Sector Size are both non-zero. If not, this error occurs.
Wrong Partition	If a specific partition is selected from the partition list, and the destination code of the Header record downloaded does not match the index of that partition, this error occurs.
Image Too Big	The size of the image is also part of the Header record. If the data to be written exceeds the size of the partition as indicated in the partition table, this error occurs.
Incorrect Byte Count	Image data is processed until the End Of File (EOF - Record Type 01) record is received. This error occurs if IPL detects that the number of bytes received does not equal the number of bytes sent.
Unable to Verify Partition Data	If the Receive and Verify bit is set for that partition, the data (the Flash sector erased and the data written to the Flash part) is verified. If this data can not be verified, this error occurs.
Transmission Errors	<p>The following error messages may appear if an error occurs during transmission:</p> <ul style="list-style-type: none"> • “Checksum Error” occurs if an invalid checksum is detected in the record. • “Invalid Record” occurs if a record is not defined in the Symbol Hex File Format. • “Connection Lost” occurs if one of the handshaking lines is de-asserted during download. • “Address Out of Sequence” occurs if the address of the data received is not sequential.



TCM Error Messages

TCM validates the cells in your partition table when you press the **Enter** button. Cells highlighted in red contain an error. Partition loading is disabled until all errors are corrected. The errors that TCM may encounter and possible solutions are described in [Table 9-3](#).

Table 9-3. TCM Error Messages

Error	Description/Solution
Error - Partition Size	The size of a partition must be an integral multiple of the FFSSectorSizeInBytes specified by the .ini file. When the user enters a partition size, TCM rounds up to the next highest integral multiple of the sector size and displays this value in the partition table grid. This error check is made upon value entry, independent of the Execute button.
Error - Image Larger than Partition	If the required size of the binary image file is larger than the associated partition size, the Partition Size cell in the partition grid turns red to highlight the error. The Required Size cell indicates the actual size required.
Error - Total size of all FFS Partition	If the total memory allocated to the 3 FFS partitions is greater than the total Flash Memory on the terminal, the Used FFS Memory display box turns red. Decrease the size of one or more of the partitions, then recheck the configuration using the Execute button.
Error - Source/ Destination Path Verification	If the directory paths specified by the Source and Destination cells do not exist, the cell containing the non-existent path turns red to highlight the error.

For more information on FFS Partitions and Non-FFS Partitions, see *Flash Storage* on page 9-24.

Creating and Loading a Splash Screen

To generate a custom splash screen, use a bitmap editor.

1. Create a color bitmap with dimensions of BX x BY where:
 - BX is less than or equal to 240 pixels
 - BY is less than or equal to 320 pixels

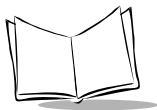
Note: For best quality use a relatively high resolution color image (256 color). Lower resolution images also work.

2. Save the file as a 256 color bitmap.
3. Use TCM to convert the bitmap image file to a Hex file (see *Building the Image* on page 9-10).

Loading the Splash Screen via TCM

To load the bitmap:

1. Open the TCM application.
2. Connect the terminal to the development PC and invoke IPL to prepare the terminal to receive the splash screen download (see *Set Up IPL to Receive the File* on page 9-12).
3. Select *Load Terminal* from the *File* menu on the development PC.
4. Select your splash screen Hex file to begin downloading to the terminal.
5. Close the TCM application.



Flash Storage

Programs pre-installed on your terminal are stored in read-only memory (ROM). You cannot remove, modify, or accidentally lose this software. You may add programs and data files to random access memory (RAM).

In addition to the RAM-based storage standard on Windows CE terminals, the PPT 8800 is also equipped with a non-volatile Flash-based storage area which can store data (partitions) that can not be corrupted by a hard reset. This Flash area is divided into two categories: Flash File System (FFS) Partitions and Non-FFS Partitions.

FFS Partitions

The PPT 8800 terminal includes three FFS partitions. These partitions appear to the terminal as a hard drive that the OS file system can write files to and read files from. Data is retained even if power is removed.

The three FFS partitions appear as three separate folders in the Windows CE file system and are as follows:

- **Platform:** The Platform FFS partition contains Symbol-supplied programs and Dynamic Link Libraries (DLLs). This FFS is configured to include DLLs that control system operation. Since these drivers are required for basic terminal operation, only experienced users should modify the content of this partition.
- **Application:** The Application FFS partition is used to store application programs needed to operate the terminal.

Working with FFS Partitions

Because the FFS partitions appear as folders under the Windows CE file system, they can be written to and read like any other folder. For example, an application program can write data to a file located in the Application folder just as it would to the Windows folder. However, the file in the Application folder is in non-volatile storage and is not lost on a hard reset (e.g., when power is removed for a long period of time).

Standard tools such as ActiveSync can be used to copy files to and from the FFS partitions. They appear as the “Application,” “Platform,” and “Data” folders to the ActiveSync explorer. This is useful when installing applications on the PPT 8800. Applications stored in the Application folder are retained even when the terminal is hard reseted, just as the PPT 8800 Demo program is retained in memory.

Windows CE expects certain files to be in the Windows folder, residing in volatile storage. Windows CE maintains the System Registry in volatile storage. There are two device drivers included in the Windows CE image to assist developers in configuring the terminal following a hard reset: **RegMerge** and **CopyFile**.

RegMerge.dll

RegMerge.dll is a built-in driver that allows registry edits to be made to the Windows CE Registry. Regmerge.dll runs very early in the boot process and looks for registry files (.reg files) in certain Flash File System folders during a hard reset. It then merges the registry changes that are in these files into the system registry located in RAM.

Since the registry is re-created on every hard reset from the default ROM image, the RegMerge driver is necessary to make registry modifications persistent over hard resets.

RegMerge is configured to look in three specific folders for .reg files in the following order:

- \Platform

- \Application

Regmerge continues to look for .reg files in these folders until all folders are checked. This allows folders later in the list to override folders earlier in the list. This way, it is possible to override Registry changes made by the Platforms partitions folders. Take care when using Regmerge to make Registry changes. The SDK contains examples of .reg files.

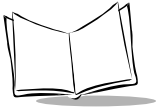
Note: *Regmerge only merges the .reg files on hard resets. The merge process is skipped during a soft reset.*

Typically, you should not need to make modifications to registry values for drivers loaded before RegMerge. However, sometimes during software development, you may need to modify these values. Since these early loading drivers read these keys before RegMerge gets a chance to change them, you must soft reset the terminal after a hard reset. The soft reset does not re-initialize the registry, and the early loading driver reads the new registry values.

Do not use Regmerge to modify built-in driver registry values, or merge the same Registry value to two files in the same folder, as the results are undefined.

CopyFile

CopyFile copies files from one folder to another on a hard reset. Files can be copied from a non-volatile partition (Application or Platform) to the Windows or other volatile partition



during a hard reset. During a hard reset **CopyFile** looks for files with a .CPY extension on the FFS partition. These files are text files containing the source and destination for the desired files to be copied separated by ">".

Non-FFS Partitions

Non-FFS Partitions include additional software and data pre-loaded on your terminal that can be upgraded. Unlike FFS Partitions, these partitions are not visible when the operating system is running. They also contain system information. Non-FFS partitions include the following:

- **Windows CE:** The complete Windows CE operating system is stored on Flash devices. If necessary, the entire OS image may be downloaded to the terminal using files provided by Symbol. The current OS partition on the terminal is included as part of the TCM installation package. Any upgrades must be obtained from Symbol. This partition is mandatory for the PPT 8800.
- **Splash Screen:** a bitmap displayed as the terminal hard resets. You may download a customized screen to display.
- **IPL (Initial Program Loader):** This program interfaces with the host computer and allows you to download via cradle or serial cable any or all of the partitions listed above, as well as updated versions of IPL. Use caution downloading updated IPL versions; incorrect downloading of an IPL causes permanent damage to your terminal. IPL is mandatory for the PPT 8800.
- **Partition Table:** Identifies where each partition is loaded in the terminal.

Assigning User-Written Applications to Buttons

Use **RegMerge** to modify the registry during a hard reset to assign user-written applications to the application buttons. These buttons remain assigned after a hard reset.

Note: *Although located in the Flash File System, we recommend copying user applications to the Windows directory (using CopyFile) and running them from there. See the WinCE Help file on the SDK for more information.*

Adding Programs

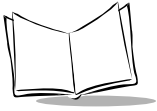
Install the appropriate software on your host computer before installing it on your terminal.

1. Select *Start - Settings - Control Panel*. Double-tap the *System* icon. In the *General* tab, note the information in *Processor* field.
2. Download the program to your host computer (or insert the CD or disk that contains the program into your host computer). You may see a single *.xip file, *.exe file, a *.zip file, or a Setup.exe file.
3. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
4. Connect your terminal to the host computer.
5. Double-click the *.exe file on the host computer.

If the file is an installer, the installation wizard begins. Follow the directions on the window. Once the software is installed on your host computer, the installer transfers the software to your terminal.

If the file is not an installer, an error message states that the program is valid but is designed for a different type of computer. Move this file to your terminal. If you cannot find installation instructions for the program in the Read Me file or documentation, use ActiveSync Explore to copy the program file to the Program Files folder on your terminal. For more information on copying files using ActiveSync, see ActiveSync Help.

When installation is complete, tap *Start - Programs on the terminal*, then select the program icon.



Adding a Program from the Internet

1. Select *Start - Settings - Control Panel* on the terminal. Double-tap the *System* icon. In the *General* tab, note the information in *Processor* field.
2. Download the program to your terminal from the Internet using Pocket Internet Explorer. You may see a single *.xip, *.exe, *.zip file, or a Setup.exe file.
3. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
4. Tap the file, such as a *.xip or *.exe file, to launch the installation wizard. Follow the directions on the window.

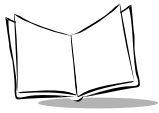


Chapter 10

AirBEAM Smart

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Introduction

The AirBEAM Smart product allows specially designed software packages to be transferred between a host server and Symbol wireless handheld devices. Before transfer, AirBEAM Smart checks and compares package version, so that only updated packages are loaded.

AirBEAM Smart resides on radio-equipped client devices, and allows them to request, download, and install software, as well as to upload files and status data. Both download and upload of files can be accomplished in a single communications session. The ability to transfer software over a radio network can greatly reduce the logistical efforts of client software management.

In an AirBEAM system, a network-accessible host server acts as the storage point for the software transfer. The AirBEAM Smart Client uses the industry standard FTP or TFTP file transfer protocols to check the host system for updates, and if necessary, to transfer updated software.

For detailed information about AirBEAM Smart, refer to *AirBEAM Smart Windows® CE Client Product Reference Guide*.

AirBEAM Package Builder

In a typical distributed AirBEAM system, software to be transferred is organized into packages. In general, an AirBEAM package is simply a set of files that are assigned attributes both as an entire package and as individual component files. The package is assigned a version number, and the transfer occurs when an updated version is available.

An AirBEAM package can optionally contain developer-specified logic to be used to install the package. Installation logic is typically used to update client device flash images or radio firmware. Examples of common AirBEAM packages would include packages for custom client application software, radio firmware and AirBEAM Client software.

Once these packages are built, they are installed on the host server for retrieval by the handheld device. The AirBEAM Package Builder is a utility used to define, generate and install AirBEAM packages to a server. The packages are then loaded from the server onto a client device equipped with an AirBEAM Client executable.

For detailed instructions on how to define, generate and install AirBEAM packages to the server, refer to the *AirBEAM Package Builder Product Reference Guide*, p/n 72-55769-xx.



AirBEAM Smart Client

The AirBEAM Smart Client is installed on your handheld terminal. It is configured with the server access information, the names of the packages to be downloaded and other controlling parameters. When the AirBEAM Smart Client is launched, the device connects to the specified FTP server and checks the packages it is configured to look for. If the package version was updated, the client requests the transfer.

AirBEAM Smart License

The AirBEAM Smart Client is a licensed software product. The AirBEAM Smart Client's version synchronization functionality is enabled through a license key file that is stored on the client device. The license key file can be built into AirBEAM Smart Client's image, or downloaded in a special AirBEAM package.

The AirBEAM Smart license key file contains a unique key and a customer specific banner that is displayed when the AirBEAM Smart Client version synchronization logic is invoked.

Configuring the AirBEAM Smart Client

1. Select *Start - Programs - AirBEAM Client*. The *AirBEAM CE* window appears.
2. Tap *File - Configure*. The *AirBEAM* configuration window appears.

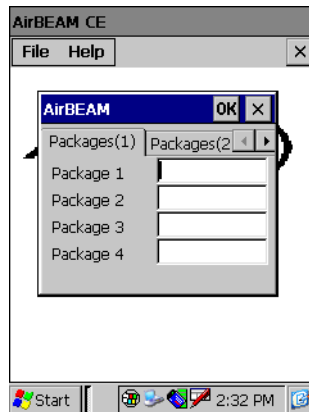
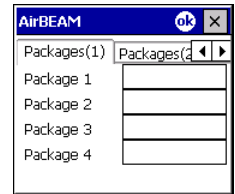


Figure 10-1. AirBEAM Smart Configuration Window

The configuration window is used to view and edit AirBEAM Smart Client configurations. This dialog box has six tabs that you can modify - Packages(1), Packages(2), Server, Misc(1), Misc(2) and Misc(3).

Packages(1) Tab

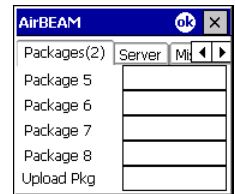
This tab is used to specify the package name of the first four of eight packages that are to be loaded during the AirBEAM Smart synchronization process. The specified package name must correspond to a package that is available on the specified package server.



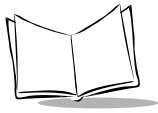
Field	Description
Package 1	Package name of the first of eight packages. This is an optional field.
Package 2	Package name of the second of eight packages. This is an optional field.
Package 3	Package name of the third of eight packages. This is an optional field.
Package 4	Package name of the fourth of eight packages. This is an optional field.

Packages(2) Tab

This tab is used to specify the package name of the last four of eight packages that are to be loaded during the AirBEAM Smart synchronization process. The specified package name must correspond to a package that is available on the specified package server.



Field	Description
Package 5	Package name of the fifth of eight packages. This is an optional field.
Package 6	Package name of the sixth of eight packages. This is an optional field.
Package 7	Package name of the seventh of eight packages. This is an optional field.
Package 8	Package name of the eighth of eight packages. This is an optional field.
Upload Pkg	Package name of a package that is to be processed for "upload files" during the AirBEAM Smart synchronization process. The specified package name must correspond to a package that is available on the specified package server. This is an optional field.



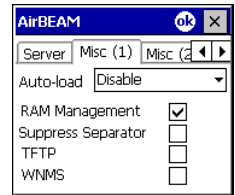
Server Tab

This tab is used to specify the configurations of the server to which the client connects during the package synchronization process.

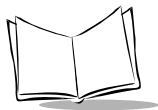
Field	Description
IP Address	The IP Address of the server. It may be a host name or a dot notation format.
Directory	The directory on the server that contains the AirBEAM package definition files. All AirBEAM package definition files are retrieved from this directory during the package synchronization process.
User	The FTP user name that is used during the login phase of the package synchronization process.
Password	The FTP password that corresponds to the FTP user specified in the User field. The specified password is used during the login phase of the package synchronization process.

Misc(1) Tab

This tab is used to configure various miscellaneous features.



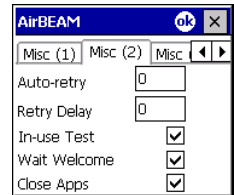
Field	Description
Auto-load	<p>This drop-down list is used to specify how the AirBEAM Smart Client is to be invoked automatically when the client device is rebooted. The selections are:</p> <p>Disable: the AirBEAM Smart Client is not invoked automatically during the boot sequence.</p> <p>Interactive: the AirBEAM Smart Client is invoked automatically during the boot sequence. The package synchronization process is started automatically. The <i>Synchronization Dialog</i> box appears, and the user is required to press the OK button when the process is complete.</p> <p>Non-interactive: the AirBEAM Smart Client is invoked automatically during the boot sequence. The package synchronization process is started automatically. The <i>Synchronization Dialog</i> box is displayed, but the user is not required to tap OK when the process is complete. The <i>Synchronization Dialog</i> box terminates automatically.</p> <p>Background: the AirBEAM Smart Client is invoked automatically during the boot sequence. The package synchronization process is started automatically. Nothing is displayed while the synchronization process is occurring.</p>
RAM Management	<p>This checkbox specifies whether the automatic RAM management is enabled during the package synchronization process.</p> <p>If enabled, RAM management logic is invoked when there is not enough free disk space to download a package. The RAM management logic attempts to remove any discardable AirBEAM packages resident on the client.</p>



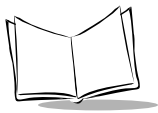
Field	Description
Suppress Separator	<p>This checkbox specifies whether the automatic insertion of a file path separator character should be suppressed when the client generated server package definition file names.</p> <p>When enabled, the parameter also disables the appending of .apd to the package. This feature is useful for AS/400 systems, in which the file path separator character is a period. When this feature is enabled, the server directory (Directory) and package name (Package 1, Package 2, Package 3, and Package 4) are appended "as is" when building the name for the server package definition file.</p> <p>When this feature is disabled, a standard file path separator is used to separate the server directory (Directory) and package name (Package 1, Package 2, Package 3, and Package 4) when building the name for the server package definition file. In addition, an .apd extension is appended automatically.</p>
TFTP	<p>This checkbox specifies whether the TFTP protocol is to be used to download files. By default, the AirBEAM Smart Client uses the FTP protocol.</p>
WNMS	<p>This checkbox specifies whether the AirBEAM Smart Client uploads a WNMS information file at the end of each version synchronization.</p>

Misc(2) Tab

This tab is used to configure various miscellaneous features.

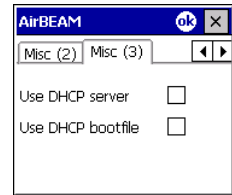


Field	Description
Auto-retry	<p>This field is used to specify whether the AirBEAM Smart Client automatically retries if there is a failure during the synchronization process.</p> <p>If this feature is enabled, the AirBEAM Smart Client displays a popup dialog indicating the attempt of a retry. The popup dialog is displayed for the number of seconds specified in the <i>Retry Delay</i> field.</p> <p>The valid values for this field are:</p> <ul style="list-style-type: none"> -1: the AirBEAM Smart Client automatically retries indefinitely. 0: the AirBEAM Smart Client does not automatically retry. -0: the AirBEAM Smart Client automatically retries up to the number of times specified.
Retry Delay	This field specifies the amount of time, in seconds, that the AirBEAM Smart Client will delay before automatically retrying after a synchronization failure.
In-use Test	This checkbox specifies whether the AirBEAM Smart Client tests to determine if a file is in-use before downloading. If the <i>In-use Test</i> feature is enabled, the AirBEAM Smart Client downloads a temporary copy of any files that are in-use. If any temporary in-use files are downloaded the AirBEAM Smart Client automatically resets the client to complete the copy of the in-use files. If the <i>In-use Test</i> feature is disabled, the synchronization process fails (-813) if any download files are in-use.
Wait Welcome	This checkbox specifies whether the AirBEAM Smart Client waits for the WELCOME windows to be completed before automatically launching the synchronization process after a reset.
Close Apps	This checkbox specifies whether the AirBEAM Smart Client automatically attempts to close non-system applications prior to resetting the mobile unit. If enabled the AirBEAM Smart Client sends a WM_CLOSE message to all non-system applications before resetting the mobile unit. This feature offers applications the opportunity to prepare (i.e. close open files) for the pending reset.



Misc(3) Tab

This tab is used to configure various miscellaneous features.



Field	Description
Use DHCP server	This checkbox control specifies whether the AirBEAM Smart Client uses the DHCP response option 66 to specify the <i>IP address</i> of the FTP/TFTP server. If enabled, special RF network registry settings are required to force the DHCP server to return the "TFTP server name" field (option 66). The special RF network registry settings are included, but commented out, in the radio network registry initialization files (essid_xxxx_yy.reg).
Use DHCP bootfile	This check box control specifies whether the AirBEAM Smart Client uses the DHCP response option 67 to specify the <i>Package</i> and <i>Package 1</i> parameters. If enabled, special RF network registry settings are required to force the DHCP server to return the "Bootfile name" field (option 67). The special RF network registry settings are included, but commented out, in the radio network registry initialization files (essid_xxxx_yy.reg).

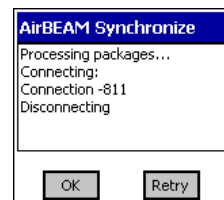
Synchronizing with the Server

When the synchronization process is initiated, the AirBEAM Smart Client attempts to open an FTP session using the AirBEAM Smart Client configuration. Once connected, the client processes the specified packages. Packages are loaded only if the server version of a given package is different from the version loaded on the client. Once the upload process is complete, the AirBEAM Smart Client closes the FTP session with the server.

The AirBEAM Smart Client can launch an FTP session with the server either manually, when initiated by the user, or automatically.

Manual Synchronization

1. Configure the AirBEAM Smart Client. See *Configuring the AirBEAM Smart Client* on page 10-4.
2. From the main *AirBEAM CE* window, select *File - Synchronize*.
3. Once connected, the AirBEAM Synchronize window appears.
 - The Status List displays status messages that indicate the progress of the synchronization process.
 - Tap **OK** to return to the Main Menu. This button remains inactive until the synchronization process is complete.
 - Tap **Retry** to restart the synchronization process. This button is activated only if there is an error during the synchronization process.



Automatic Synchronization

The AirBEAM Smart Client can be configured to launch automatically using the Misc(1) Preference tab (see *Misc(1) Tab* on page 10-7). When setting automatic synchronization, use the Auto-load drop-down list to specify how the AirBEAM Smart Client should be invoked automatically when the client device is rebooted. Refer to *Misc(1) Tab* on page 10-7 for instructions on enabling Auto Sync.



AirBEAM Staging

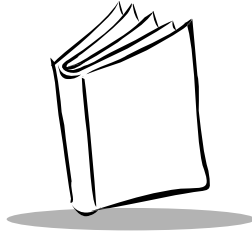
The AirBEAM Smart staging support is intended to speed up and simplify the process of staging custom or updated operating software onto mobile devices directly from manufacturing. The staging support is part of the AirBEAM Smart CE Client that is integrated into the terminal.

The AirBEAM Smart support works by defaulting the AirBEAM Smart Client configuration to a known set of values and launching the AirBEAM Smart package download logic. A staging environment, including an RF network, FTP server and AirBEAM packages must be setup. Ideally a staging network and server should be setup to match the default AirBEAM Staging client configuration.

The AirBEAM Smart staging utility is invoked by selecting *Start - Programs - AirBEAM Staging*.

The AirBEAM Staging support provides several benefits:

- Many devices can be simultaneously loaded over the RF network.
- The AirBEAM staging utility provides a simple single dialog user interface that is used to quickly start the software installation process.

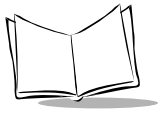


Chapter 11

Maintenance and Troubleshooting

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Introduction

This chapter includes instructions on cleaning and storing your terminal, and provides troubleshooting solutions for potential problems during terminal operating.

Safely Maintaining the PPT 8800

For trouble-free service, observe the following tips when using your terminal:

- Take care not to scratch the screen of your terminal. When working with your terminal, use the supplied stylus or plastic-tipped pens intended for use with a touch-sensitive screen. Never use an actual pen or pencil or other sharp object on the surface of the terminal screen.
- Although your terminal is water and dust resistant, do not expose it to rain or moisture for an extended period of time. In general, treat your terminal as you would a pocket calculator or other small electronic instrument.
- The touch-sensitive screen of your terminal contains glass. Take care not to drop your terminal or subject it to strong impact.
- Protect your terminal from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep it away from heat sources.
- Do not store or use your terminal in any location that is extremely dusty, damp or wet.
- Use a soft lens cloth to clean your terminal. If the surface of the terminal screen becomes soiled, clean it with a soft cloth moistened with a diluted window-cleaning solution. (See *Terminal and Cradle Connector Cleaning Guidelines* on page 11-4 for additional information about cleaning the terminal and cradle connectors.)

WARNING

Avoid exposing the PPT 8800, including its cradle, to contact with hot oil or other flammable liquids. If such exposure occurs, immediately clean the terminal (or cradle) in accordance with the cleaning guidelines at the end of this guide.



Terminal and Cradle Connector Cleaning Guidelines

This section explains the proper way to clean the connector area of the PPT 8800 terminal and cradle.

Required Materials

Use the following cleaning materials:

- Cotton tipped applicators (Puritan)
- Isopropyl alcohol
- Can of compressed air with a tube/nozzle (Micro Blast)
- Lint free cloth.

WARNING

Read the warning label on compressed air and alcohol products before using and ALWAYS wear eye protection.

Cleaning the Terminal Connector

To clean the terminal connector, follow the steps below.

1. Remove the main battery from the terminal.
2. Replace the battery cover (see *Installing the Main Battery* on page 1-7).
3. Dip the cotton portion of the cotton tipped applicator in isopropyl alcohol.
4. Insert the cotton portion of the cotton tipped applicator inside the connector on the bottom of the terminal as shown in [Figure 11-1](#). (Ensure the tip of the cotton touches the back of the connector.)

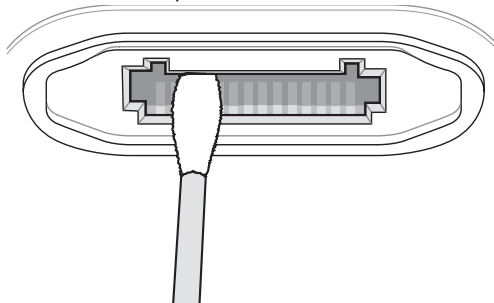


Figure 11-1. Inserting the Cotton Tipped Applicator

5. Twist the cotton tipped applicator and slowly move it back-and-forth from one side of the connector to the other.

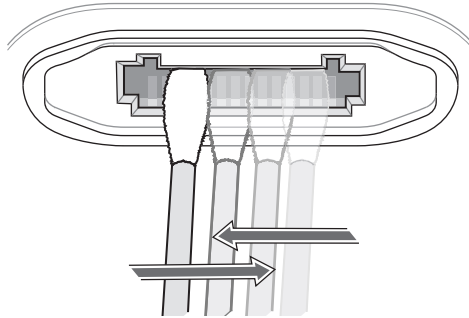


Figure 11-2. Cleaning the Connector

6. Repeat step 5 at least three times.
7. Remove the cotton tipped applicator from the connector.

Note: *The cotton tipped applicator dipped in alcohol can also be used to scrub off any grease and dirt near the connector area.*

8. Using a dry cotton tipped applicator, repeat steps 3-5.
9. Spray compressed air in the connector area by pointing the tube/nozzle approximately 1/2 inch away from the surface.

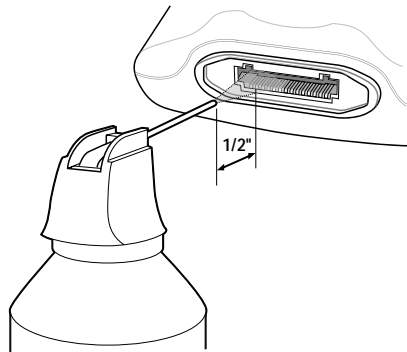
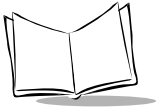


Figure 11-3. Air Spray Terminal Connector



WARNING

Do not point the tube/nozzle at yourself and others. Ensure the tube or nozzle is away from your face.

10. Inspect the area for any grease or dirt.
11. Repeat steps 3-9 as required.
12. Ensure there is no lint left by the cotton tipped applicator.
13. Remove lint, if found.

Cleaning the Cradle Connector

To clean the cradle connector, follow the steps below.

1. Remove the power to the cradle by unplugging the DC cable.
2. Position the cradle as shown in [Figure 11-4](#).

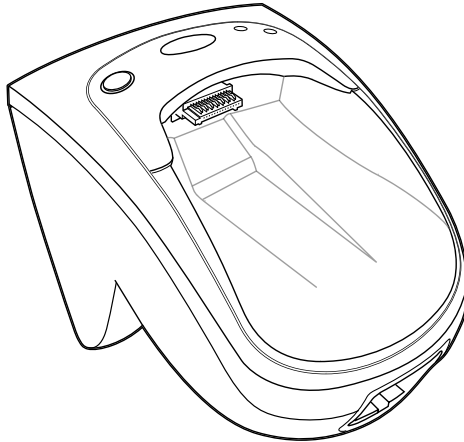


Figure 11-4. Preparing the Cradle

3. Dip the cotton portion of the cotton tipped applicator in isopropyl alcohol.
4. Scrub the cotton portion of the cotton tipped applicator along the pins as shown in [Figure 11-5](#), slowly moving back-and-forth from one side of the connector to the other.

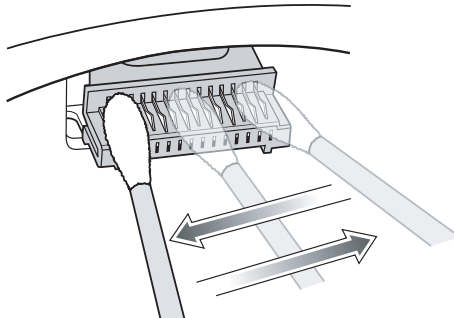
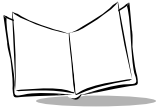


Figure 11-5. Cleaning the Cradle Connector Pins



5. All sides of the connector should also be scrubbed with the cotton tipped applicator, illustrated by the arrows in [Figure 11-6](#).

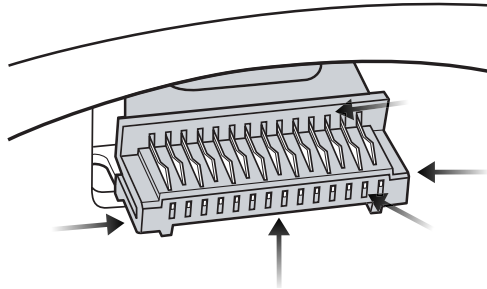


Figure 11-6. Cleaning the Cradle Connector

6. Spray compressed air in the connector area by pointing the tube/nozzle approximately 1/2 inch away from the surface.

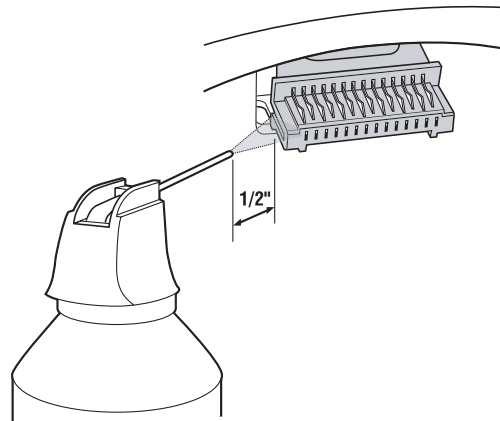


Figure 11-7. Air Spray Cradle Connector

WARNING

Do not point the tube/nozzle at yourself and others. Ensure the tube or nozzle is away from your face.

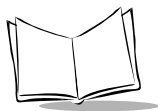
7. Ensure there is no lint left by the cotton tipped applicator.
8. Remove lint, if found.

9. If grease and other dirt is found on other areas of the cradle, use a lint free cloth and alcohol to remove.
10. Allow at least 10-30 minutes (depending on ambient temperature/humidity) for the alcohol to air dry before apply power to cradle.

Note: *If temperature is low and humidity is high, longer drying time is needed. Warm and dry requires less drying time. DO NOT PLACE PRODUCTS IN AN OVEN OR UNDER HEAT LAMPS!*

WARNING

Avoid exposing this product to contact with hot oil or other flammable liquids. If such exposure occurs, unplug the unit and clean the product immediately in accordance with these guidelines.



Troubleshooting

Table 11-1. Troubleshooting the Terminal

Problem	Cause	Solution
Terminal does not turn on.	Lithium-ion battery not charged.	Charge or replace the lithium-ion battery in the terminal.
	Lithium-ion battery not installed properly.	Ensure battery is installed properly. See <i>Installing the Main Battery</i> on page 1-7.
	System crash.	Perform a soft reset. If the terminal still does not turn on, perform a hard reset. See <i>Resetting the Terminal</i> on page 2-15.
Rechargeable lithium-ion battery did not charge.	Battery failed.	Replace battery. If your terminal still does not operate, try a soft reset, then a hard reset. See <i>Resetting the Terminal</i> on page 2-15.
	Terminal removed from cradle while battery was charging.	Insert terminal in cradle and begin charging. The lithium-ion battery requires 2 1/2 hours to recharge fully.
Cannot see characters on display.	Terminal not powered on.	Press the Power button.
Fail to communicate with IrDA printer.	Distance from printer is between 5 inches and 39 inches.	Bring the terminal closer to the printer and attempt communication again.
	Obstruction interfered with communication.	Check the path to ensure no objects were in the way.
	Application is not enabled to run IrDA printing.	Printer support must be included with the application to run IrDA printing on the terminal. See your System Administrator.

Table 11-1. Troubleshooting the Terminal (continued)

Problem	Cause	Solution
During data communication, no data was transmitted, or transmitted data was incomplete.	Terminal removed from cradle or unplugged from host PC during communication.	Replace the terminal in the cradle, or replace the Synchronization cable, and re-transmit.
	Incorrect cable configuration.	See your System Administrator.
	Communication software was incorrectly installed or configured.	Perform setup. Refer to Chapter 4, Communications for details.
No sound is audible.	Volume setting is low or turned off.	Check the volume slider in the <i>Volume & Sound</i> properties dialog box in the Control Panel to ensure the volume is not turned down.
Terminal turns itself off.	Terminal is inactive.	Your terminal turns off after a period of inactivity. If the terminal is running on battery power, this period can be set from 1 to 5 minutes, in one-minute intervals. If the terminal is running on external power, this period can be set to 1, 2, 5, 10, 15, and 30 minutes. Check the <i>Power</i> dialog box (in the Control Panel), and change the setting if you need a longer delay before the automatic shutoff feature activates.
	Battery is depleted.	Replace the battery.
	Battery cover is removed.	Replace the battery cover.
Tapping the window buttons or icons does not activate the corresponding feature.	LCD screen not aligned correctly.	Re-calibrate the screen. See <i>Recalibrating the Touch Screen</i> on page 3-41.
	The system is hung.	Soft reset the system. To perform a soft reset, see Resetting the Terminal on page 2-15 .

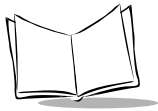


Table 11-1. Troubleshooting the Terminal (continued)

Problem	Cause	Solution
A message appears stating that your terminal memory is full.	Too many files stored on the terminal.	Delete unused memos and records. You can save these records on your host computer.
	Too many applications installed on the terminal.	If you have installed additional applications on your terminal, remove them to recover memory. Select <i>Start - Settings -Control Panel. Double-tap the Remove Programs icon. Select the unused program and tap Remove.</i>
Beamed data does not transmit.	Terminals too close together or too far apart.	Confirm that the terminals are at least 5 inches and at most 39 inches apart. Also ensure that there is a clear path between the two devices.
	Insufficient room lighting.	Adjust the room lighting or move to a different location.
When receiving beamed data an out of memory message appears.	Not enough free memory available for receiving data.	Your terminal requires at least twice the amount of memory available as the data you are receiving. For example, if you are receiving a 30K application, you must have at least 60K free.

Table 11-1. Troubleshooting the Terminal (continued)

Problem	Cause	Solution
Your terminal does not accept scan input.	Scanning application is not loaded.	Verify that the unit is loaded with a scanning application. See your System Administrator.
	Unreadable bar code.	Ensure the symbol is not defaced.
	Distance between exit window and bar code is incorrect.	Ensure you are within proper scanning range.
	Terminal is not programmed for the bar code.	Ensure the terminal is programmed to accept the type of bar code you are scanning.
	Terminal is not programmed to generate a beep.	If you are expecting a beep on a good decode and don't hear one, check that the application is set to generate a beep on good decode.
	Battery is low.	If the scanner stops emitting a laser beam when you press the trigger, check your battery level. When the battery is low, the scanner shuts off before the terminal notifies you of the low battery condition. Note: If the scanner is still not reading symbols, contact your distributor or Symbol Technologies.

Note: *If, after performing these checks, the terminal is still not reading symbols, contact your distributor or Symbol Technologies.*

Table 11-2. Troubleshooting Bluetooth Connection

Problem	Cause	Solution
Cannot connect to a device in my folder.	The services for the devices have not been discovered.	In the <i>Bluetooth Devices</i> window, tap the device icon. Select <i>Device - Properties</i> . Tap the <i>Services</i> tab. Tap Update .

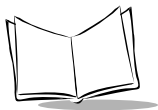
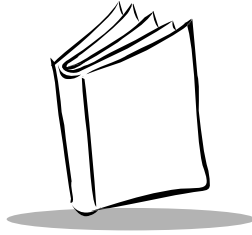


Table 11-2. Troubleshooting Bluetooth Connection (continued)

Problem	Cause	Solution
When using the <i>Get Connected! Wizard</i> to connect to a phone, I get a screen that says <i>Partial Success</i> .	The phone is not in Bondable mode.	Set the phone to Bondable mode. If needed, consult your phone's user documentation for help.
	The passkey is incorrect.	Ensure the same passkey is entered on the phone and the terminal. If using a pre-assigned passkey for the phone, verify that your passkey is accurate.
The terminal cannot find any Bluetooth devices nearby.	Too far from other Bluetooth devices.	Move closer to the other Bluetooth device(s), within a range of 10 meters.
	The Bluetooth device(s) nearby are not turned on.	Turn on the Bluetooth device(s) you wish to find.
	The Bluetooth device(s) are not in discoverable mode.	Set the Bluetooth device(s) to discoverable mode. If needed, refer to the device's user documentation for help.
The terminal keeps powering down to protect memory contents.	The terminal's battery is low.	Recharge the battery.
	The Bluetooth radio has been in Discoverable mode for a long time. This mode requires a lot of battery power and should be turned off whenever not needed.	Tap the <i>Bluetooth</i> icon, then select <i>My Bluetooth Device</i> . Uncheck <i>Discoverable</i> .
When trying to connect a Bluetooth phone and terminal, the phone thinks that I am using a different terminal that I previously paired with the phone.	The phone remembers the name and address of the terminal it last paired with via your Bluetooth radio.	Manually delete the pairing device and name from your phone. Refer to your phone's user documentation for instructions.
Can't make my Ericsson R520 phone discoverable.	You attempted to bond with the phone, and when the phone presented a "pairing query," you entered No. This prevents the phone from being discoverable until it is reset.	Reset the phone by removing its battery.



Appendix A

Technical Specifications

Environment

The following table summarizes the terminal's intended operating environment.

Table A-1. Technical Specifications

Operating Temperature	14° to 122° F (-10° to +50° C)
Storage Temperature	-13° to 158° F (-25° to 70° C)
Battery Charging Temperature	0° C to +40° C (+32° F to +104° F) Note: To charge the battery for the mobile device, battery and charger temperature must be between +32° F and +104° F (0° C and +40° C).
Humidity	5% to 90% non-condensing
Electrostatic Discharge (ESD)	+/-15 kVDC (air); +/- 8 kVDC (contact)
Drop to Concrete	4 feet (1.2 meters)
Sealing	IP54 (dust category 2)
Dimensions	1.3 in. H x 3.1 in. W x 5.7 in. L (33 mm H x 80 mm W x 146 mm L)
Weight (including battery)	PPT 8800 with battery: 10.1 oz (286 g) PPT 8846 with battery: 10.8 oz (306 g) PPT 8860 with battery: 10.4 oz (296 g)
Display	Transflective color TFT-LCD, 65K colors, 240 (W) x 320 (L) (QVGA size)

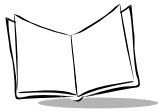


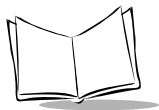
Table A-1. Technical Specifications (Continued)

Touch Panel	Glass analog resistive touch
Main Battery Standard:	Standard: Rechargeable Lithium-Ion 1700 mAh minimum (3.7V) Optional: Larger capacity rechargeable Lithium-Ion 3400 mAh minimum (3.7V)
Backup Battery	Ni-MH battery (rechargeable), 15mAh (2.4V) 2 cells
CPU	Intel® XScale™ PXA250
Operating Platform	Microsoft® Embedded Windows® CE 4.1 (CE .NET)
Memory	32MB RAM/ 32MB ROM
Interface	RS-232, max. 115.2 kbps min. 1200bps
CF Card Slot	Type II (not user accessible) Options: 128 MB CF memory 802.11b radio Bluetooth radio
Keypad Options	Standard 6-key and 15-key versions with power button.
1D Decode Capability	UPC/EAN/JAN, Code 39, Code 93, Code 128, Interleaved 2 of 5, Discrete 2 of 5, Codabar (NW-7), UCC/EAN-128

COM Port Definitions

Table A-2. PPT 8800 COM Port Definitions

COM Port	Definition
COM1	Serial/Cradle
COM2	Available
COM3	IRComm
COM4	Raw IrDA
COM5	Available
COM6	Scanner
COM7	VCOM Ext Power
COM8	Available
COM9	Available



Pin-Outs

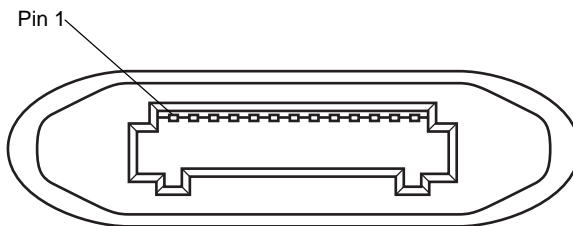
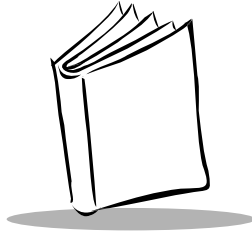


Figure A-1. ActiveSync Port (COM1)

Table A-3. PPT 8800 ActiveSync Port (COM1) Pin-Outs

Pin	Description
1	ext ± 5 volts
2	DSR
3	RXD
4	RTS
5	TXD
6	CTS
7	DCD
8	RI
9	DTR
10	RS232_gnd
11	Power_GND
12	9 Volts_In
13	NC
14	NC





Appendix B

Keyboard Maps

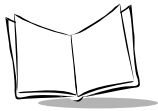
Introduction

This appendix contains the keyboard map for the keyboard configuration of the terminal. Each key is listed in the table with its value, depending on the state of the keyboard.

As shown below, when the  key is pressed on the keyboard, the default state displays the number '1'. After pressing the Shift key, the press of the '1' key acts as a Clear button.

Key	Default State	Shift State	VK Code (Decimal)	ASCII Value (Decimal)
	1		49	49
		Clear	46	

In addition to key values, VK codes and ASCII values are listed for each key, where applicable.



Keyboards

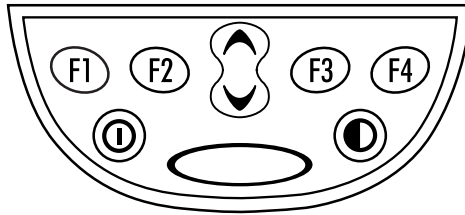


Figure B-1. Standard 6-Key Keyboard

Table B-1. Standard 6-Key Keyboard Functionality








Key	Default State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	TAB			9	9
			-	-	-
	LEFT			37	-
			Software Keyboard	-	-
	RIGHT			39	-
			-	-	-
	ESCAPE			27	27
			Calibrate	-	-
	UP			38	-
			Lighten screen	-	-
	DOWN			40	-
			Darken screen	-	-

Table B-1. Standard 6-Key Keyboard Functionality (Continued)

Key	Default State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	ENTER			13	13
				-	-

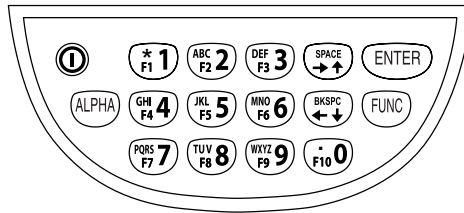
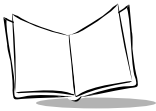




Figure B-2. 15-Key Keyboard

Table B-2. 15-Key Keyboard Functionality

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	1					49	49
		@				16+50	64
		-				189	45
		_				16+189	95
		/				191	47
			:			16+186	58
			?			16+191	63
			!			16+49	33
			,			188	44
					F1	112	-
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							

Table B-2. 15-Key Keyboard Functionality (Continued)

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	2					50	50
		a				65	97
		b				66	98
		c				67	99
			A			65	65
			B			66	66
			C			67	67
					F2	113	-
	3					51	51
		d				68	100
		e				69	101
		f				70	102
			D			68	68
			E			69	69
			F			70	70
					F3	114	-
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							

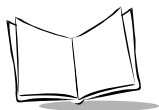


Table B-2. 15-Key Keyboard Functionality (Continued)

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	4					52	52
		d				71	103
		e				72	104
		f				73	105
			D			71	71
			E			72	72
			F			73	73
					F3	115	-
	5					53	53
		j				74	106
		k				75	107
		l				76	108
			J			74	74
			K			75	75
			L			76	76
					F5	116	-
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							

Table B-2. 15-Key Keyboard Functionality (Continued)







Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	6					54	54
		m				77	109
		n				78	110
		o				79	111
			M			77	77
			N			78	78
			O			79	79
					calibrate		-
					*F6	117	-
	7					55	55
		p				80	112
		q				81	113
		r				82	114
		s				83	115
			P			80	80
			Q			81	81
			R			82	82
			S			83	83
					Darken screen		-
					*F7	118	-
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							

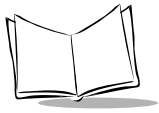


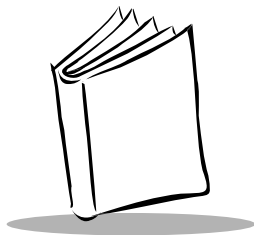
Table B-2. 15-Key Keyboard Functionality (Continued)

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	8					56	56
		t				84	116
		u				85	117
		v				86	118
			T			84	84
			U			85	85
			V			86	86
					Lighten screen		
					*F8	119	-
	9					57	57
		w				87	119
		x				88	120
		y				89	121
		z				90	122
			W			87	87
			X			88	88
			Y			89	89
			Z			90	90
					ESCAPE	27	27
					*F9	120	-
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							

Table B-2. 15-Key Keyboard Functionality (Continued)

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	0					48	48
		.				190	46
			.			190	46
					TAB	9	9
					*F10	121	-
	UP					38	-
		SPACE				32	32
			SPACE			32	32
					RIGHT	39	-
	DOWN					40	-
		BK SPC				8	8
			BK SPC			8	8
					LEFT	37	-
	ENTER					13	13
		ENTER				13	13
			ENTER			13	13
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							





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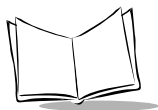
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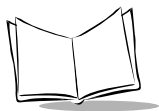
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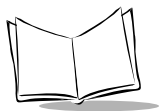
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